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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*A Case of Lymphadenoma associated with Recurrent Fever.** By HENRY T. BEWLEY, M.D.; Physician to the Adelaide Hospital, Dublin; and J. ALFRED SCOTT, F.R.C.S.I.; Pathologist to the Adelaide Hospital, Dublin; and Professor of Physiology, R.C.S.I.

CASES of long-continued pyrexia, not due to any of the ordinary causes—tuberculosis, typhoid, or septicæmia in its usual sense—occasionally occur, and, from their obscurity as well as rarity, deserve some consideration. The case we are about to bring before the Academy presents many features of interest.

CASE.—Mr. H. was born in 1865. His mother died of phthisis. He was a man, strongly built, and about 5 ft. 8 in. in height. He went to sea as an engineer on various cargo-steamers, and was in many places where malaria exists, but never had an attack of this disease. He contracted syphilis 6 or 8 years ago, and was treated with mercury; it was a mild attack, and he never had any recurrence of its symptoms. He remained at his work as an engineer till 1898, when he was employed on a grain-steamer. Here he was greatly exposed to the dust of the grain while the boat was being loaded and unloaded, and he seems to have suffered in some way from its effects. At any rate some of his friends thought he never seemed quite the same man afterwards.

* Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, November 21st, 1902.

In 1898 he left his work on board ship and became a commercial traveller, travelling mostly in the North of England. His health kept very good till the end of October, 1900. At this time he began to feel poorly; he became disinclined for work, lost his appetite, and developed a cough. He consulted a doctor in Hull, who found his temperature was 101° or 102°, and believed he heard some râles in his right apex. The doctor concluded Mr. H. was developing phthisis, and advised him to come home.

I saw him at his father's house in Ranelagh., Dublin, on Nov. 11, 1900. His temperature was raised, and he obviously felt very unwell, but I could not detect any physical signs of disease in either lung. In fact there was no sign of illness except the pyrexia. There were no spots; his spleen was not enlarged; his urine was healthy; his pulse quiet, from 66 to 80; his heart sound; his bowels were rather confined, so that an occasional dose of cascara or other purgative was needed. He could take light food fairly well. He had some cough, rather paroxysmal in character, and tending to end in retching, and occasionally in vomiting. From the absence of every other obvious cause of fever I began to suspect an anomalous case of typhoid, and Dr. Scott kindly examined his blood for me. He found Widal's reaction present, though not in a very marked degree; so we concluded the disease was typhoid.

The attack lasted four weeks; then, after a week's interval of normal temperature there was a relapse of 10 days' duration; then, after 10 days, a second slighter relapse of 10 days. After this his temperature remained down; he grew stronger; ate largely and grew fat, and went to Llandudno on Feb. 6, 1901. He remained there for a month, and though he became fairly well he never got quite strong, and suffered from cold perspirations; also from pain and tenderness in his feet.

He came home on March 7, 1901, very fairly well, but soon developed a cold and again became feverish. I again failed to detect any physical sign of any disease. He, however, was more ill than during his first attack, less able to take food, and more depressed. His temperature, the course of which was quite irregular, tended to rise. On April 9th Dr. Little saw him with me, and agreed with me that all his organs were healthy. Arguing, however, from the paroxysmal cough, which often ended in retching, he thought there were probably enlarged intra-thoracic glands, either syphilitic or tubercular, irritating some of the

nerves in the thorax.—a view which is remarkably borne out by the autopsy.

Mr. H. became worse ; began to be delirious at night ; his temperature was found to be persistently about 103°. Dr. Scott again examined his sputum, urine, and blood. The urine was healthy ; there was no trace of tubercle or malaria ; there were no microbes found in the blood ; the blood count was as follows :—

Red blood corpuscles, 3,570,000 per cm.

1 or 2 white in 2,288.

Hæmoglobin, 90% = 1·3 normal, per red blood corpuscle.

All treatment—quinine, mercury, arsenic—was quite ineffectual. It looked as if he was going to die, when on April 26 his temperature began to fall ; fell to normal in 3 days ; never rose again ; and in a week he was out in the garden, practically well. His family had nursed him, but on April 25 a nurse came, and the improvement seemed to date from several enemas which she gave him, and which thoroughly cleaned out his bowels.

On May 10 he went to Howth and seemed well, but could only walk a short way owing to numbness and tenderness in his feet, which I thought might be due to slight neuritis.

On May 18th his temperature again began to rise ; Dr. Little had suggested a sea voyage, and he now resolved to go to Monte Video, for which place he sailed on May 30, the temperature being then about 103°.

The fever continued till he left Rio on his way back, about the beginning of July. He came home on July 23 looking well and stout. He was able to walk 3 or 4 miles, but still complained of his feet. He spent a month in Co. Wexford with friends, and became very fat—almost 14 stone in weight. He came home on Oct. 9, but soon became dull, apathetic, disinclined to go out. I saw him again on Nov. 2, and found again fairly high fever, with nothing apparent to account for it. He steadily became weaker, took but little food, and as he could not be nursed properly at home came into the Adelaide Hospital on Nov. 18. From that time on his temperature was from 102° to 104° ; his bowels were rather confined ; he needed occasional purgatives ; the urine contained a trace of albumin. Dr. Scott examined his blood on Nov. 26 and found—

Red blood corpuscles, 3,725,000.

White blood corpuscles, 1 in 600.

Hæmoglobin, 37·5% = $\frac{1}{2}$ normal, per red blood corpuscle.

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Thence he became steadily worse ; his pulse became weak and frequent, 100, 120, 140. Rhonchi developed in the bronchial tubes ; he became delirious, then comatose, and died, as fever patients die, of heart failure on Dec. 2nd, 1901.

To sum up :—This man came of a tuberculous family ; had had mild syphilis about 1895 ; was quite strong till November, 1900, when a fever commenced which lasted over five weeks, and was followed by two relapses of 10 days' duration each. He was well for about six weeks ; then (about March 15th) a condition of high fever came on and lasted six weeks, ending by crisis on April 27th. On May 18th pyrexia again came on, lasting till the beginning of July. Then he was well till the beginning of November, when high fever recommenced and lasted four weeks—till his death. During all this time, if we exclude the first attack and the relapses, which were probably due to enteric, no one could discover any cause whatever for his pyrexia.

The *post-mortem* examination showed that the body was well nourished, although not so stout as he had formerly been. In the thorax a large mass could easily be seen under the sternum, in front of the trachea. This lay over the upper portion of the pericardium, and extended on each side above and behind the roots of both lungs, lying round the œsophagus, and behind the heart. Roughly, its dimensions were about 4 inches wide at the upper part, and about 5 inches long at the back. It was made up of a number of ovoid masses, like large lymphatic glands, about $\frac{1}{2}$ inch to $1\frac{1}{2}$ inches in diameter. These when cut appeared a light grey colour, with black spots scattered through them (absorbed carbon). In some cases these latter were absent. A small separate mass of similar appearance, about $\frac{1}{2}$ inch diameter, was attached to the inner pleural surface of the upper lobe of the right lung, extending about half its size into the lung substance. The middle lobe contained a small oval mass $\frac{3}{4}$ inch long, apparently calcified at the centre.

In the abdominal cavity more of these apparently enlarged glands existed at the attachment of the mesentery round the aorta, and in the mesentery a calcified mass, about 1 inch long, was found. A small grey spot was noticed on the liver surface. The spleen was enlarged, measuring about 6 inches by $3\frac{1}{2}$ inches, and weighed 1 lb. 2 oz. The surface was mottled with irregular, light patches, which could be felt to be firm, and which appeared

on section to be in the substance of the spleen. Those at the capsule look like small infarctions.

The intestines were examined through their whole length. Peyer's patches were almost completely absent. In one spot a few follicles were scattered over an area, which was thinner and paler than the surrounding portion, and other oval pale portions could be seen, about the size of a Peyer's patch. These were probably the scars of old typhoid ulcers. No *increase* of the lymphoid tissue was seen.

The heart, brain, kidneys, suprarenals, and thyroid were normal.

Microscopically, the appearances of the thoracic tumours and the growths in the liver and spleen were very similar. Those in the thorax are principally composed of fibrous tissue strands, with a few cells lying between them. Most of the cells are small, similar to lymph cells, with a few larger ones, some of which have apparently more than one nucleus. In the spleen the fibres were finer, but otherwise the general description was the same.

The appearances agree with those described by Greenfield (*Path. Soc. Jour.*, 1878, XXIX., p. 272), as found in some cases of lymphadenoma, and is apparently the same condition called by Virchow lympho-sarcoma. There are two extreme forms found in this disease. In the majority of cases they appear to be simply enlarged glands with, perhaps, an apparent removal of the normal structure by an overgrowth of cells. In other cases—whether a later one or not it is difficult to determine—there is an overgrowth of the connective tissue fibres, with an inverse reduction in the number of lymph cells, together with the presence of multinucleated cells, possibly endothelial. Occasionally the arrangement of the cells suggests the appearances seen in some sarcomata, which is emphasised by the tendency of these tumours to form metastatic growths in other organs. The growths at present under consideration apparently belong to those cases associated with an increase of the connective tissue, the appearance being very like those figured by Greenfield.

Sections from various portions were examined for micro-organisms, none being found. I thought some would have been there from the history of steamer dust. While it is possible that such may be present which cannot be stained

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by present methods, it is also conceivable that they may have been a factor in the case at an early stage and have vanished subsequently. This, indeed, has been noticed in a case quoted by Shaw (*Edin. Med. Jour.*, Dec., 1901), to which our attention was directed by Dr. Little, which has been of great use. None were found in this case when the blood was examined during one of the febrile attacks. Might it not be possible that such were inhaled a couple of years ago when on the grain-steamer, and that these micro-organisms started some interstitial inflammation which continued to increase, although the actual cause was removed. There was no leucocytosis on either of the occasions when the blood was examined—a result which is not surprising in the light of the *post-mortem* examination, so many of the lymph glands being reduced to simple masses of fibrous tissue.

It is difficult to discuss the question of the intermittent high temperature; nothing was seen which would give any reason for it. Micro-organisms have been seen in published cases coinciding with the periods of high temperature, but not in this case.

The temperature appears to be generally higher than normal in Hodgkin's Disease, though not always intermittent. In these cases it has been suggested that the high temperature coincides with the period of active growth of the tumours where such do not grow quite regularly.

Which of these two views is correct? Do some cases of lymphadenoma form in their growth some poison which causes fever? or are the attacks of fever due to the more or less accidental entrance into the body of microbes? To these questions it is not yet possible to give any definite answer. Dr. Shaw (*loc. cit.*) favours the latter view. The closing sentence of his paper will express much of what is known on this obscure subject. He writes: "Consideration of the above cases impresses the view that 'lymphadenoma with recurrent fever' is not a special form of disease; that such cases are due to a terminal infection occurring at any time during the last year of life of some patients affected with lymphadenoma; that the nature of the bacterial invasion is different in different cases; and that in some cases proof of a bacterial invasion is wanting; that in a consider-

able number of cases of lymphadenoma with recurrent fever there is a great constitutional disturbance with elevation of temperature, rigors, vomiting and diarrhoea, anorexia and malaise; that in some cases urobilinurea is a marked symptom; that in some of the cases the superficial lymphatic glands and even the spleen became very tender and enlarged during the attacks; and that the skin over the enlarged glands may become reddened and show an increase of local temperature. Finally, that the prognosis in such cases is, as a rule, hopeless, and that the duration of life after the onset of the periodic attacks of fever averages about seven and a half months, but may be as much as twelve or fourteen months."

ART. II.—*The Control of Consumption by the Public Health Authority.** By T. PERCY C. KIRKPATRICK, M.D., Assistant Physician to Dr. Steevens' Hospital, Dublin.

IN the year 1897 the Dublin University Biological Association held a special general meeting, at which many distinguished guests were present, for the purpose of calling public attention to the spread of tuberculosis in the City, and resolutions were passed urging the authorities to take steps to prevent the spread of infection. This was, I believe, the first such meeting held in this country, and preceded by a considerable time the inception of the great anti-tuberculosis campaign which is at present being waged with such success in other countries. Ever since that time this Association has taken a very deep interest in the movement, and it seemed to me that a review of what has been already done in the past, as well as suggestions for our guidance in the future, would be a very suitable subject for my opening address.

The question is one of very pressing interest to us Irishmen, since the disease is so widespread and destructive amongst us, and since our country occupies the unique and unenviable position of still having an increasing mortality from tubercular disease. I do not wish to weary you with statistics,

* Inaugural Address delivered at the opening meeting of the twenty-eighth session of the Dublin University Biological Association, November 27th, 1902.

but when I tell you that in this country in the year 1900 phthisis caused 10,076 deaths, out of a total of 87,606, or a rate of 225·6 per 100,000 of the estimated population, or more than one-ninth of the rate from all causes combined, you will see that it is time we were up and doing if we do not wish to be left hopelessly behind other countries in the advance towards that satisfactory condition of public health which Preventive Medicine appears to promise. In other countries the efforts to prevent phthisis have been rewarded with a very marked degree of success. Thus in the City of New York the death-rate from phthisis has been reduced by over 30 per cent. since the adoption of preventive measures some ten years ago, and similar gratifying results have been obtained elsewhere. Let us consider then carefully the methods by which these results have been obtained, and by a study of the conditions existing in our own country see if we can learn any useful lessons for our future guidance.

In Manchester, Dr. Niven, the able Medical Officer of Health, assisted by your distinguished Vice-President, Dr. James Beatty, has been carrying on an active campaign against tuberculosis, and also has given us a very full account of their methods. As early as the year 1894 the campaign was opened in Manchester by the distribution of handbills to every house in the city, giving instructions in precautionary measures; but at that time there was no possibility of ascertaining whether the measures so advised were adopted or not. I think we may fairly conclude that, among the poorer classes at all events, very little attention was paid to such instructions. In order then to enable the Public Health Authorities to exercise some supervision over such cases, and, where necessary, enforce the adoption of preventive measures, a very complete scheme was drawn up and adopted by the City Council in the year 1899, and this, with certain additions and modifications, has been in force ever since. The main lines of this scheme may be grouped under the following heads:—

1. Voluntary notification of consumptive cases.
2. Education of the public in general, and of the patient and his friends in particular, in the nature of the disease.
3. Treatment of the patient's surroundings.

4. Supervision.
5. Provision of isolation hospitals.
6. Protection of the food supply from contamination by the tubercle bacillus.

By far the most important part of this scheme, from an administrative point of view, is the adoption of notification, as without this the Executive has no means of knowing where the cases are, and so is unable to carry out effectively any preventive measures. In Manchester no attempt was made to bring phthisis under the provisions of the Infectious Disease Notification Act of 1889, but practitioners were asked to notify cases, and a scale of fees payable for such notification was drawn up. The names and addresses of the cases notified were registered, and if it was thought advisable further steps were taken with a view to supervision and inspection. A very important adjunct to notification in the form of the free bacterial examination of sputum was undertaken for medical practitioners, so that in all cases the diagnosis could be confirmed. If such examination gave negative results the medical man was asked whether he still adhered to his diagnosis, and if so, the case was considered one of phthisis from an administrative point of view. The education of the patient and his friends in the nature of the disease is personally undertaken by the assistant medical officer, who visits the house after the case has been registered. An effort is made to educate the public generally by the posting of notices pointing out the danger of promiscuous spitting in railway stations, tramcars, public-houses, common lodging-houses, and workshops, &c. As yet Manchester has not gone as far as Glamorganshire, where the County Council adopted the following by-law by a majority of eight votes:—"A person shall not spit on the floor of any public carriage, any church, chapel, public hall, waiting-room, school-room, theatre, or shop, whether admission has been obtained thereto by payment or not. Any person offending against this by-law shall be liable to a fine not exceeding £5." There is, however, little doubt that a similar by-law will be adopted by many more of the County Councils in the near future.

As regards the treatment of the surroundings, the assistant medical officer reports any sanitary defects in houses visited,

and they are dealt with by the ordinary methods of the Sanitary Department, while the special disinfection is carried out under the supervision of the sanitary inspectors. The ceilings are lime-washed, the walls are rubbed down with dough, the floor, woodwork, and furniture are washed with ordinary soap and water. This process the inhabitants carry out themselves under supervision. If, however, the house is very dirty, or evidently infected, the Corporation disinfects the walls, floors, ceilings, and articles of furniture by washing with one per cent. solution of chlorinated lime, the paper usually being stripped from the walls in every case. The clothing, bedding, &c., are disinfected by steam. Some such process of disinfection is, of course, carried out in our own City by the Public Health Department in every case of infectious disease which is notified among the poor. Regular supervision of infected houses is undertaken by the sanitary visitors or inspectors, and a continuous record of the state of the house kept, while a quarterly disinfection or thorough cleaning of the house is insisted on in every case. As Dr. Beatty says, supervision is the most difficult part of the scheme to carry out satisfactorily, yet it is remarkable how smoothly it works on the whole, and how seldom the visits are resented, or there is any refusal to carry out the precautions suggested. The value of such a scheme of supervision from an educational point of view can hardly be overrated. Manchester has not yet been able to do much in the way of provision of hospital accommodation, either as sanatoria for the early cases, or isolation hospitals for the advanced cases, but in this respect there will probably be a marked advance in the future. Very elaborate precautions are adopted to prevent infection by either meat or milk; but in view of the pronouncement of Koch on the transmissibility of bovine tuberculosis, it is hardly to be expected that other places will adopt any new or expensive methods of prevention in this department while the question is still *sub judice*.

The adoption of precautionary measures in New York City is largely due to the energy of Dr. Herman Biggs, who has given such an admirable description of what has been done there. The first official action was taken in New York in the year 1889, when the Board of Health asked the consulting

pathologists of the Department for a report on the causation and prevention of tuberculosis. This report was presented in the same year, and laid particular stress on the following points:—Tuberculosis is a preventable disease; it is not directly inherited, but transmitted from the sick to the healthy, chiefly by means of dried sputum suspended as dust in the air. From this report, presented twelve years ago, we learn as fully and completely as we can at the present day the nature of the problem that we have to deal with, and all subsequent work on the subject has simply confirmed and amplified these statements. Various suggestions were made in the report as to the measures which should be adopted with a view to prevention, dealing chiefly with food inspection, education, and disinfection of premises inhabited by tubercular patients. On the receipt of this report the Board of Health consulted with many of the leading physicians of New York, and as a result decided that the medical profession and people were not prepared to accept active preventive measures founded on the belief that tuberculosis was an infectious disease. This being so, little was done except inspection of food and an endeavour to disseminate knowledge as to the nature of tuberculosis. So effectively, however, was this latter measure carried out that during the winter of 1893–94 the Board of Health, on the recommendation of Dr. Biggs, adopted certain resolutions giving effect to the following principles:—Notification, inspection and disinfection of infected dwellings. A request was made for the voluntary notification of cases of tuberculosis under the care of the physicians in the city. It was pointed out to the physicians that this information was solely for the use of the Department, and that in no case would visits be made by the inspectors unless the patient resided in a boarding house, tenement house, or hotel, except at the request of the attending physicians, and even in the case of such places if the physician requested that visits should not be made, and signified his willingness to afford the necessary instruction to the patients, no further steps would be taken by the Department. Compulsory notification was adopted in the case of public institutions, such as hospitals, prisons and asylums, &c. Visits of inspection, with a view to affording instruction and to report on the necessity for further

steps, were determined on in the case of tenement houses, boarding houses and hotels, except in those cases provided for above. In every case where the premises which had been occupied by a consumptive were vacated, either by death or removal, visits were made by the inspector, who directed the removal of infected articles such as bedding, carpets, &c., for free disinfection by the Department, while the owner was compelled to have the premises disinfected at his own expense. No person other than those residing there at the time were allowed to occupy such apartments till this order had been carried out. Bacteriological examination of the sputum was undertaken free of charge by the Department, provided that it was sent in bottles accompanied by a paper setting forth the name, age, sex, and address of the patient. Suitable bottles and blank forms to be filled in were supplied free to those who wished to make use of them.

In the year 1897 the Board of Health adopted a resolution making notification of tuberculosis compulsory, and applied to the Board of Estimate and Apportionment for funds to provide hospital accommodation for those suffering from pulmonary consumption. A sum of 60,000 dollars was granted for this purpose in the year 1898, but in subsequent years this amount was somewhat reduced. From this brief outline of the features of the movement in New York we can learn much that will be useful for our guidance at home ; but before we proceed to apply these lessons let us glance for a few moments at the results that have been attained by them.

During the first year after the commencement of the work 4,166 cases of tuberculosis were notified, during the second year 5,824, during the third year 8,334, while in 1900 the cases numbered 11,997 ; the number of houses inspected has increased proportionally. As a result of this, Dr. Biggs is able to make the following statement :—

“ There has been a reduction in the mortality from tuberculous diseases in New York City since 1886 of more than 35 per cent. ; and I have no hesitation in saying that I believe with a complete and efficient scheme for dealing with pulmonary tuberculosis, including hospital accommodation and the proper enforcement of precautionary measures, the death-rate from the tuberculous diseases in New York City may

be further reduced one-third within a period of five years. This would mean a saving of 3,000 lives annually."

Such, then, is a brief history of what has been done in two great cities such as Manchester and New York, and we may take it as typical of what is being done, in a smaller way perhaps, almost all over the civilized world. In our own country, and especially in our own City of Dublin, there is ample evidence of the necessity for some such war against consumption, and in the face of the results obtained elsewhere the guardians of our public health incur a grave responsibility if they delay much longer its commencement. I propose to devote the remainder of the time at my disposal in considering a plan of campaign which would be applicable to our conditions here.

It is no longer necessary to argue the question of the advisableness of municipal control of public health; it will, I think, be granted that under present conditions it is only by such authority that large questions of public health can be at all satisfactorily dealt with. However much may be done by private enterprise and philanthropic associations, we can expect little permanent advance without the constant co-operation and assistance of those who alone can make compulsory and universal the adoption of those preventive measures on which such advance will depend. I do not wish for one moment to suggest any hostility towards those public and private associations which have done so much for us in the past, in the foundation and management of hospitals and the spreading of knowledge of sanitary matters; but I believe that they, from their very number, are inadequate to deal with such a question as the prevention of consumption. Taking for granted then that the already constituted Public Health Authorities are the proper bodies to deal with this question, let us consider what course of procedure we can recommend for their adoption.

It seems almost a truism to say that the first essential in the administration of any disease from a public health point of view is that the responsible authority should be in a position to know where the cases of that disease exist. The only way in which this knowledge can be obtained is by notification, and the only form of notification which has been found to

work satisfactorily is compulsory notification. Although this is so, there is, perhaps, no point in the administration of preventive measures against phthisis which has been so hotly disputed, and about which there are so diverse opinions, as the adoption of compulsory notification. The advantages to be derived from notification are so obvious that it is unnecessary to dwell on them further than to say that without its aid it is difficult to see how any substantial progress can be made. Let us then examine the objections against it, and see if they are of such a nature as to compel us to abandon a means from which so much good is to be expected. Much confusion has arisen from the idea that if compulsory notification is adopted it is necessary to put in force in regard to phthisis all the provisions of the Infectious Diseases Notification Act, and consequently render phthisical persons who expose themselves in public liable to the penalties which that Act entails. Such a state of affairs would undoubtedly be intolerable in the case of a chronic disease like phthisis; depriving, as it would, many who were well able to work of their liberty, and involving the State in an enormous expense for their support. It is this idea which appears to pervade the late Sir Richard Thorne's objections which he published in the Harben Lectures in the year 1898, on the Administrative Control of Tuberculosis. Thorne said that, in his opinion, "a large amount of harm would result if phthisis were included in the list of diseases notifiable under the English Act." The same idea appears to pervade the minds of other objectors, even though they have no objection to offer to the notification of the acute infectious fevers.

There is no doubt that at first notification appears a hardship and a breach of that most sacred trust, professional secrecy; but we must remember that the principle has been accepted on the grounds of public utility, and in many cases in this country the provisions of the Act have been voluntarily adopted by the District Councils, though they are composed almost entirely of laymen. If the lay public wish to absolve medical men from this bond of secrecy, in definite cases and for definite ends, there does not appear any reason for objection on the part of the medical men themselves. Notification to the sanitary authority does not mean notification to the

community at large, and, if carried out on the lines adopted in Manchester and New York, does not involve any hardship to the individual unless that individual, by his neglect of proper precautionary measures, makes himself a source of danger to the community. Surely in such cases the community has the right of protecting itself from such persons. There is one objection which I fear will carry more weight, in this country at all events, than all the others, and that is the expense involved. It is unreasonable to expect, and unfair to ask, medical men to work for nothing, and undoubtedly the notification fees in a city like Dublin would form a considerable item for some years to come. We must remember, however, that it is an item which will decrease rather than increase, and which promises the very best value for the money expended. No doubt the fact that one case would be notified again and again by different practitioners would add to the expense. This appears to be unavoidable; but the difficulty would, I believe, be greatly lessened if medical men were asked to try and find out as far as possible if the cases had been already notified. There is another difficulty, and one to my mind of much more importance than those already urged, and that is the impossibility in many of the early cases of making any sort of an accurate diagnosis without a bacteriological examination of the sputum. It would be out of the question to expect the busy and overworked dispensary medical officers to undertake such examination. Thus to make notification efficient some method of free examination of sputum must be devised. This, of course, would be quite simple if we were provided with a properly fitted bacteriological laboratory. The necessity for such an institution in the city has been urged again and again, but so far without result, apparently on account of the expense it would entail. Although such an institution would be of the utmost value, not only for the administrative control of phthisis, but for the sanitary administration in general, yet I believe that it would not be an absolute essential, at the outset at all events, in our campaign against phthisis. For the detection of tubercle bacilli in sputum no costly or elaborate appliances are necessary, and I believe it would be possible for the sanitary authority to carry it out even with the means at their disposal in the

city at present. It is possible now in private cases to have the report of a skilled bacteriologist on tubercular sputum at the cost of three shillings. In the City of Manchester for the year 1901, specimens to the number of 517 were examined for the Public Health Authority, under the supervision of Professor Delépine, at Owens College. Would it not be possible for the Public Health Authority here to contract with pathologists in the various centres of the city to examine sputum, and report to them the results at a cost which would be quite insignificant compared with what would be necessary for the establishment and equipment of a laboratory? In Manchester during the same year 1,339 fresh cases of phthisis were notified, while 1,142 deaths were recorded; so that from these figures we may conclude that in Dublin the adoption of the scheme I have outlined would not be so very costly.

The immediate result of the adoption of such a scheme will be to place the sanitary authorities in a position to deal with tuberculosis both effectively and cheaply. Let us see then what measures we can recommend to them for this purpose. The future extinction of tuberculosis can be hoped for only as the result of the combined efforts of the community, both lay and medical, and the only way that we can obtain such a combination is by the education of the public in the nature of the disease. One of the first duties then of the sanitary authority will be the diffusion of such knowledge. This will be much more simple and direct when given to the patients and their friends than when simply given to the public in general. Information about matters which personally concern us or our friends is much more likely to be fruitful than when to us it appears merely of general interest. The sanitary inspectors will be able to impart such information to patients of the poorer classes directly, and at the same time give instruction how the danger of infection of the healthy by the diseased may be avoided. For this purpose, as well as to see that the instructions given are carried out, regular and systematic inspection of the homes of the tubercular should be carried out. The whole experience of sanitary supervision at the present day tends to show that such inspection will be welcomed rather than objected to, in spite

of what *a priori* considerations would lead us to believe. I feel sure I shall not be contradicted when I say that sanitary inspection of the homes of the poor, when carried out by properly authorised persons, is almost always well received. To such inspection and supervision should be added periodic disinfection of the houses, and for such purpose I cannot suggest any better method than that which I have described as carried out in Manchester under the control of Dr. Beatty. Here again experience confutes our preconceived ideas. I have had some experience of the disinfection of the homes of the poor as carried out in the case of the acute infectious fevers in this city, and though I know well how thorough this is, and how much discomfort the people are necessarily subjected to, yet it is rare to find any objection raised to it—rather they seek it and ask for it on their own initiative.

There is one other part of any scheme for the prevention of consumption to which I must allude—a part, too, which appears at the outset to be far the most formidable of all. I refer to the provision of isolation hospitals. I have heard it stated by a competent authority that every bed in all the Dublin hospitals could be filled with consumptive patients without exhausting the supply of such patients in the city. I do not think that this greatly, if at all, over-states the case, and the question at once arises how can we possibly provide accommodation for such a multitude with the funds at our disposal. In the first place, I should like to point out that the Public Health Authority has only to deal with, and provide for, the health of the community at large, and not with that of the individual. Consequently, it is only so far as the health of the individual affects that of the community that it comes within the jurisdiction of the Public Health Authority. Consumptive patients, then, come within the jurisdiction of this authority, because of the danger which exists of their spreading the disease, and because of their number, which causes such an important item in the increase in the death-rate. Were it not for the existence of the first of these two reasons the Public Health Department might completely neglect the consideration of phthisis. Take, for example, the case of cancer. The death-rate from this disease in Ireland during the year 1900 was '6 per 1,000, and caused 1,469 more deaths

than small-pox, measles, scarlatina, and diphtheria taken together; yet since, so far as we know at present, a cancer patient is not in himself a source of danger to the community, the Public Health Authority takes no steps as regards his control. This is a point of great importance, since it absolves the Public Health Authority from direct responsibility for the provision of sanatoria for the cure of the disease. Of course, in so far as such sanatoria are a valuable means of prevention they come within the scope of this authority, but only so far. There are two separate and distinct classes to be dealt with in regard to hospital accommodation—those early cases in which permanent arrest or complete cure may be expected, and those cases which are so far advanced that no improvement beyond mere alleviation of symptoms can be hoped for. With the adoption of proper precautionary measures the first class need not be a source of danger to the public at all, and it is only in so far as they form the constant recruiting ground for the second class that it becomes our duty to try and cure them by the provision of sanatoria. Such patients, however, are isolated in sanatoria for their own good, and it is difficult to see how they could be compelled to enter such institutions against their will, provided they conducted themselves in such a way as not to be a source of danger to others. With the second class it is different, for since they are unable to work and support themselves they will in consequence be unable in the majority of cases to adopt the necessary precautionary measures, and so may fairly be compelled to submit to isolation. While then we look on sanatoria for the treatment and cure of phthisis as a most useful preventive measure, still they must not be considered as essential; and even without their aid we may hope for a very large measure of success in our efforts towards the stamping out of the disease. Let us see, however, if we cannot make more use of the means already at our disposal, for there is no doubt that in the near future, when the public become more alive to the necessities of the case, the provision of funds for the erection of sanatoria will be much more readily forthcoming. At the present time it is the rule in our Dublin hospitals to refuse as far as possible admission to phthisical patients, on the grounds that they are unsuitable for treatment in a general

hospital. I say advisedly as far as possible, for cases are constantly presenting themselves with hæmorrhage or some other complication, which renders it impossible to refuse admission. In consequence of this you will constantly find phthisical patients in the general wards of our hospitals side by side with other patients who are, perhaps, in a condition which renders them peculiarly liable to the infection. That this state of affairs does exist I have satisfied myself by personal investigation, and under the present circumstances, do what we may, it must exist. If each hospital were compelled to open at least one ward for each sex solely for the reception of phthisical patients it would be possible to isolate these cases, and the benefit from the point of view of the education of the patients would be enormous. I know that there are many objections to such a scheme, but none of them appear to me to be insuperable. First of all, we must remember that the hospitals are primarily for the benefit of the sick poor, and it seems unjust to exclude such a large and deserving class as the phthisical, while it is equally unjust to submit those who are not so suffering to any unnecessary risk. Thus, quite apart from any anti-tubercular campaign, there is a distinct need for some such arrangement. Then we are told that the air of a general hospital is most unsuitable for the treatment of such cases, but we must remember that very many cases are greatly benefited, when suffering from some complication such as hæmorrhage or an acute attack of bronchitis, &c., by a few weeks' residence in hospital. In such cases it may make all the difference to the possibility of their future cure. Again, in cases which are rapidly approaching their end such wards would be most suitable, as it is far preferable that they should disseminate their infection in a ward reserved exclusively for persons with the same disease than that they should do so in their own homes. I cannot believe that these wards, if properly cleaned and periodically disinfected, would be a source of danger in themselves. The chief objection is on the score of expense—the hospitals say that they cannot afford to open special wards, but the expense would be trivial compared with what would be necessary for the erection and establishment of special sanatoria. If the Corporation and the Trustees of the Hospital

Sunday Fund would make some special extra grant to hospitals which provided such wards this objection would probably vanish at once. I do not wish to be understood as claiming that such a scheme would do away with the need for sanatoria altogether, but it would satisfy the pressing need for them from the point of view of the Public Health Authority, and so greatly lessen the initial expense of our campaign. It seems hardly possible to apply the insurance system towards the maintenance of sanatoria in this country, as has been done with such success in Germany. Free medical attendance is so easily obtained by everyone of the working class that any attempt to establish such a system of insurance, if the premiums had to be deducted from the weekly wages, would probably meet with great opposition. Most of our large trading and manufacturing companies do provide medical attendance not only for their employees, but also for their wives and families. It is just in this class that consumption is most rife—that is, among those who have to spend their lives in factories and work-rooms, where the most favourable conditions for infection are to be found. Would it not be possible for some of the great trading companies to join together for the purpose of founding and maintaining sanatoria for the treatment of consumptives among their employees and their families? I feel sure that the funds so used would not be grudged by the shareholders, and the good which would result from such a scheme would be incalculable.

I have endeavoured to tell you briefly how other countries and municipalities have tried to deal with this great problem of the prevention of consumption and the means which experience has shown it necessary to adopt to attain this end. I have also endeavoured to sketch for you the outlines of a scheme which we might adopt in this country to meet the pressing wants of public health. In formulating this scheme I have tried as far as possible to make it practical rather than ideal, remembering that the poverty of our country precludes the possibility of our adopting any scheme which would involve it in great expense. We must remember, however, that the money so expended is for the advancement and improvement of the race, and if through this expenditure

we can reduce the mortality and morbidity from phthisis we are effecting a real economy in the national wealth. Vast sums of money are being spent on the education of the people, which are no doubt necessary for the advancement and improvement of the community ; but the very existence of the race in the future will depend on the success of our efforts in Preventive Medicine.

With the increased aggregation of population in the great industrial centres, and the increased facility for communication between these centres, the spread of infectious or contagious diseases has become a much more important question than it was in the past, and any neglect of the precautions for the prevention of disease is likely to be visited with much more severe and instant punishment. Great improvements are at the present time being effected in the surroundings and housing of the working classes, and it is expected that a corresponding improvement in the public health will follow as a result. No such improvement will, however, follow in the case of consumption unless steps are taken to prevent the spread of infection.

Let me urge on you one and all the necessity of individual effort to further this great work both by example and precept. It is a true saying which tells us that legislation must follow and not lead public opinion ; and since public opinion in such a matter must be largely formed by the teaching of medical men, a great responsibility is laid on us. It is not enough that we should know and do what is right ourselves, but we must teach others to know and do likewise. Mistakes will doubtless be made, and we do not claim that our knowledge is perfect, but we do claim that our knowledge is clear and definite enough to point the way along which we must go, and it is only by going along that way that we can ever hope either to increase our knowledge or approach that goal which we all desire so much to reach.

ART. III.—*Bettws-y-Coed as a Health Resort.* By JAMES DOUGLAS MACDONOGH, L.R.C.P.I., L.R.C.S.I., Tyn-y-Bryn, Bettws-y-Coed, North Wales.

BETTWS-Y-COED has been called the Paradise of Wales; and although I think all admit the beauty of its scenery, many are under the impression that it is very relaxing and has a very heavy rainfall.

Having come here as an invalid—against the advice of many—I would like to be permitted to state the result of some of my observations during 4 years' residence.

Bettws-y-Coed is situated about 90 feet above the sea level, and a little over 20 miles from the sea. It is sheltered from cold winds by pine-covered hills; and yet from the direction of its valleys sufficiently open for free ventilation, especially towards the north and west. It is traversed by the Rivers Conway and Llugwy, which receive numerous tributaries from the mountain sides, and after heavy rain these become small torrents, which wash the surface and increase the ever rapid flowing rivers.

No stagnant water remains here. The rocky bed of the rivers and many intervening waterfalls assist in oxidising the water. These rivers are of great utility in draining the soil, and also in cooling the atmosphere in summer.

The soil is gravel, very porous, and the rainfall is rapidly absorbed, the roads becoming dry in a marvellously short time, even after heavy rain.

The annual rainfall (on the average of 3 years) is 46·10 inches, being very much less than many places not far distant—Beddgelert, for instance, has a rainfall of over 100 inches annually.

The temperature of Bettws-y-Coed is higher than that of many surrounding places in the winter—a difference of 10 or 12 degrees having been noticed within 6 miles.

Snow seldom lies on the ground for many days, although it may be on the surrounding hills.

Fogs are practically unknown here. Thunderstorms are exceedingly rare in this part of North Wales, perhaps from the equability of the temperature.

Bettws-y-Coed is very much sheltered from the east wind

and from storms in general—a strong breeze here representing a gale in the channel.

The winter of 1901-2 was the most severe in Bettws-y-Coed for several years, and the following particulars apply to that year :—

TABLE I.

1901-2 MONTH	Maximum in sun	Minimum at night	No. of days or nights below 32°	No. of days 50° or above	Mean lowest temperature
October	84	36	Nil	30	40·0
November	82	22	9	22	37·7
December	66	20	8	12	36·4
January	68	22	9	16	38·9
February	78	17	15	18	31·20
March	82	30	3	29	40·27

The configuration of the place, the shelter by mountains, the area covered by trees, the interception of rainy winds by the high mountains between Bettws-y-Coed and the sea-coast, all tend to the formation of an equable climate with a medium rainfall.

Concerning the climatic effects on the health of the inhabitants, I have referred back for 20 years to the causes of death, and find a great freedom from rheumatic fever, influenza, pneumonia, pleurisy, and kidney disease.

Rheumatism and kidney disease especially seem uncommon, which may, perhaps, be accounted for by the absence of lime or chalk, the softness of the water, and the porous nature of the soil. I have known several rheumatic patients decidedly improved by residing here.

The only disease to which I have remarked Bettws-y-Coed to be generally unsuited is asthma, although I have known one patient to derive benefit from residing here, and another to lose his attacks by removing to higher and more open ground in Bettws-y-Coed.

* On 16th November, 1901, the temperature at night was 22°; on the same night it was at Loughboro' 7°, Oxford 9°, Maidenhead 20°, Henley 16°, Preston 19°, according to the daily newspapers.

TABLE II.—*Death Statistics for 20 years—Bettws-y-Coed.*

YEAR	Number of Deaths from undermentioned Diseases											Total No. of Deaths	Death-rate deducting Visitors	Infants under a year	Deaths over 65 years	Accidents Suicide (1) Manslaughter (1)
	Influenza	Pneumonia	Pleurisy	Rheumatic Fever	Scarlatina	Diphtheria	Measles	Enteric	Phthisis	Kidney Disease	Cancer					
1881	-	-	-	-	-	-	-	-	5	-	-	13	16	1	2	-
2	-	-	-	-	-	-	-	-	1	-	-	9	11	3	3	1
3	-	1	-	-	-	-	-	-	1	-	-	6	7	1	2	-]
4	-	-	-	-	-	-	-	-	1	1	-	10	13	1	5	1]
5	-	-	-	-	-	-	-	-	4	1	-	15	17	4	2	3]
6	-	-	-	-	-	-	-	-	3	-	-	15	19	3	4	2
7	-	1	-	-	-	-	3	-	3	-	-	15	19	7	3	-
8	-	2	-	-	3	1	-	-	1	-	-	15	18	-	4	1
9	-	2	-	-	-	-	-	-	2	-	-	11	12	-	6	1
1890	1	1	-	-	-	-	-	-	2	2	-	14	17	1	4	1
1	-	1	-	-	-	-	-	-	1	-	2	9	12	2	2	-
2	-	2	1	-	-	-	-	-	-	-	-	10	13	1	5	-
3	-	1	-	-	-	-	-	-	1	-	-	12	15	4	2	-
4	1	1	-	-	-	-	-	-	-	-	-	9	11	1	6	-
5	1	-	-	-	-	-	-	-	3	-	-	14	16	1	8	-
6	-	2	1	-	-	-	-	-	3	-	-	13	14	2	2	2
7	-	-	-	-	-	-	-	2	-	-	-	8	9	2	2	1
8	-	5	-	-	-	-	4	-	2	-	-	16	19	3	2	-
9	1	1	-	-	-	-	-	-	3	-	1	14	14	2	3	1
1900	3	3	-	-	-	-	-	-	1	-	1	14	16	2	2	-
Total	7	23	2	-	3	1	7	2	37	4	4	242	*15	41	69	14

Influenza = ages—90, 77, 75, 68, 66, 59, 15.

Pneumonia = secondary cause in 15—4 children; 2 visitors.

Diphtheria = given as secondary to scarlatina.

Enteric = traced to imported case.

Kidney Disease = 1 followed childbirth; 1 a visitor; 1 acute nephritis.

* Approximate average.

Of the total number of deaths in 20 years, more than half occurred in persons over 65 years of age, and infants, or were accidental.

The influenza cases occurred in those advanced in life, except one case of 15 years of age.

Influenza, when it does occur here, assumes, as a rule, a mild form.

Pneumonia in the greater number of cases is given only as a secondary cause, and apparently not due to climatic effects. Pleurisy is very rare.

I attribute the infrequency of influenza, pneumonia, and pleurisy to the absence of harsh winds in the winter and spring.

The number of cases of phthisis is probably due to the habits, diet, and employment of many of the working class, a great number being miners (lead and zinc) and quarrymen: their diet chiefly tea and bacon, their houses badly ventilated.

However, phthisis appears to be decreasing here, as elsewhere (1881 to 1890, deaths 23; 1891 to 1900, deaths 14).

The number of accidents appears large for a country village; but they are caused chiefly by the hazardous nature of the work in the mines and quarries.

28 deaths occurred in octogenarians, and 4 in nonogenarians.

Taking into account the mildness of the climate, borne out by the thermometer, the absence of catarrhal effects, the fact of geraniums and begonias blooming in the open air in November, and roses in December, the deaths occurring largely in old persons and infants—the age of these latter being in several cases measured by hours, and even by minutes, the number of deaths due either directly or indirectly to the quarries and mines, my personal experience of benefit derived from a residence here, as well as my observations of patients who have rapidly improved on a comparatively short stay here, I think I am justified in calling attention to the hitherto very much neglected benefits of Bettws-y-Coed as a Health Resort.

Anyone who finds it relaxing may in a few minutes reach the breezy hills; and the months which may perhaps be somewhat relaxing are June, July, and August, which are at present the months when visitors principally come here.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Johns Hopkins Hospital Reports. Vol. X. Nos. 3, 4, 5. Baltimore: The Johns Hopkins Press. 1902.

IN this number of the Reports four papers are contained. The first is by Dr. Dorothy M. Reed "On the Pathological Changes in Hodgkin's Disease, with Especial Reference to its Relation to Tuberculosis." The writer has had the opportunity of examining eight cases, whose clinical histories, together with the details of the *post-mortem* examinations, are carefully recorded. The following are the conclusions come to:—

"1. We should limit the term Hodgkin's Disease to designate a clinical and pathological entity, the main features of which are painless progressive glandular enlargements, usually starting in the cervical region, without the blood changes of leukæmia.

"2. The growth presents a specific histological picture, not a simple hyperplasia, but changes suggesting a chronic inflammatory process.

"3. The microscopical examination is sufficient for the diagnosis. Animal inoculation may confirm the decision by its negative results.

"4. Eosinophiles are usually present in great numbers in such growths, but not invariably. Their presence strengthens the diagnosis.

"5. The pathological agent is as yet undiscovered. Tuberculosis has no direct relation to the subject."

This paper is illustrated by four good plates.

The second paper on "Diabetes Insipidus," by Thomas B. Fitcher, M.B., gives a record of five cases of this disease. They were all males, aged from 25 to 44. The longest duration of the disease was 10 years. In all thirst was the first symptom noticed. Four gave evidence of marked cerebral disturbance. In three of these and in the remaining case the knee-jerks were exaggerated. In the other it was diminished.

There was no marked disturbance in the metabolic functions. One case added 49 grains of nitrogen to his body with very slight loss of weight. Since the nitrogen in the urine depends on the nature of the food, the old division of cases of diabetes insipidus into hydruria, azoturia, and anazoturia must be given up. Clinically the cases come under two heads:— (1) The primary or idiopathic cases, in which there is no evident organic basis for the disease; (2) the secondary or symptomatic cases, attributable to definite organic changes either of the nervous system or abdominal viscera, or to physical disturbances, &c. There are some cases on the borderline in which it is difficult to decide in which group they should be placed.

Experiments on animals have given much information as to the nervous lesions which are capable of causing temporary or permanent polyuria. In men, tumours involving the medulla and floor of the fourth ventricle, cerebral hæmorrhages, and basilar meningitis are the commonest organic lesions causing the disease. Cerebral syphilis is apparently the cause in a larger number of cases than is generally supposed, the lesion most frequently being a syphilitic basilar meningitis.

The disease is a rare one. Out of 356,637 cases treated at Johns Hopkins there were only 4 of diabetes insipidus. The nature of the disease is uncertain. There is some nervous influence causing vaso-motor disturbance of the kidneys. Enlargement and congestion of these organs is the most frequent anatomical change found. The prognosis is naturally better in the idiopathic than in the symptomatic cases. Treatment is unsatisfactory. Antisyphilitic treatment sometimes, but not always, causes an improvement in the general health, and a diminution of the symptoms.

The third paper, by Drs. W. T. Howard, jun., and R. G. Perkins, is entitled "Observations on the Origin and Occurrence of Cells with Eosinophile Granulations in Normal and Pathological Tissues." The authors give the results of the examination of a very large number of pathological and normal tissues. They describe the cells found and discuss the origin of the eosinophiles and the paths by which they reach the tissues. The work is careful and laborious, but

the true import of the eosinophile cells seems to be as yet undiscovered.

The fourth paper is by Dr. Frank W. Lynch, on "Placental Transmission, with a Report of a case during Typhoid Fever." This is a work of very great interest and importance. As a result of his own observation and of a study of the literature the author draws the following conclusions:—

"1. The typhoid bacillus may pass from the mother to the child *in utero*.

"2. The resulting disease is a foetal septicæmia.

"3. In cases of placental transmission there are generally placental lesions of a hæmorrhagic type.

"4. The child dies either *in utero* or soon after birth. There is no evidence that the foetus may survive the infection *in utero*.

"5. Placental transmission is not the rule in typhoid.

"6. The Widal is not always given with foetal blood, even though placental transmission be proven. Where present it cannot be determined whether the agglutinating substances result from the presence of the typhoid bacilli, or whether they have filtered through the placenta from the mother's blood.

"7. The agglutinating substances may be transmitted through the milk of a typhoid mother to the nursing. The reaction in the nursing's blood is but transient, and is always weaker than that of the mother's."

A list of 144 papers bearing on the subject of transmission is appended.

Diagnosis by Means of the Blood. Illustrated by 154 photomicrographs of specimens of blood, as observed in general practice, showing products that are found in definite diseases. By ROBERT LINCOLN WATKIN, M.D. London: Sampson Low, Marston & Co. 1902. Pp. 388.

THE object of this book is to show that the readiest and most certain mode of recognising a disease is to examine a specimen of freshly-drawn blood with a one-sixth inch lens. Indeed, this method of examination makes all others unnecessary. "I wish to say that when patients are sent to me by physicians

I seldom make a physical examination of the chest unless requested. My chief interest is in the appearance of the blood, and not in general physical examinations. The blood showed at once that the case was one of tuberculosis of the lungs."

Our readers will be interested to know the grounds on which this rapid diagnosis was made. It is stated that in tubercular subjects a "granular matter" exists in the blood; this exudes and forms the tubercles; the bacillus is merely an accidental concomitant. Now, what is this "granular matter?" We will quote the author that there may be no mistake:—"Some physicians have called them small corpuscles. Yet they do not resemble corpuscles; others say broken down red cells of the blood. *Bizzozero called them blood platelets or plaques.*"* "These granules in the blood are the hæmatoblasts of Hayem, the yeast of Salisbury, and the granules of Bayle." They are said to exist in the blood months, and sometimes years, before the tubercle bacillus enters the system. This we can readily believe, as they are a normal constituent of the blood, and are to be seen in every well-made preparation of healthy blood. But we may say here that the author does not seem very often to have seen a well-made preparation if we may judge from the photographs, which, with very few exceptions, are made from preparations so bad that it would be futile to draw any conclusions from them. While, then, Dr. Watkin diagnosticates tuberculosis from the presence of a perfectly normal constituent in the blood, he detects rheumatism by finding a network of fibrin in his preparations, and he actually maintains that the fibrinous network exists in the circulating blood of normal as well as of diseased subjects. In health, he says, "it is composed of fine short filaments rather closely packed and resembling a spider's web. It pervades the entire arterio-venous system with its invisible network, existing in the brain, the lungs, the heart, the stomach; spreading through every organ and capillary of the body, ever circulating and performing its function, which is as distinctive and as essential as that of the red or the white corpuscle. Thickened fibrin is one of the pathological conditions of the blood. It is this

* The italics in the quotation are our own.

thickened fibrin which collects the various crystals and insoluble particles that pathologically exist in this ceaseless river of the system as it splashes its contents against some sensitive neuron or its dendrite, and finally deposits them on the valves of the heart, or swashes its ingredients into some non-anastomosing (*sic*) vessel or capillary, or into some already painful joint. If the former deposit occurs in sufficient quantity, we have valvular disease of the heart; if the latter, it is rheumatism of the joints." "It is the contracting of this fibrin which causes the pain when a rheumatic is exposed to a draught, and it is its contraction on exposure to the air which makes it visible."

We think our readers will hardly care to hear more of the author's views, or to follow him through his account of the origin of the red corpuscles in man from the nuclei of the leucocytes, while in lizards the white cells arise from the nuclei of the red corpuscles; to hear of his discovery of the germ of syphilis, or what he calls *Crypta syphilitica*; or to learn the wonderful things he finds in the blood in other diseases. But, perhaps, we shall be excused if we quote one or two further passages as showing the kind of reasoning to be found in his work:—"In chemistry at the present time it has been found that former supposed elementary bodies are composed of several elements—the latest report being that hydrogen is a compound body. And so *applying this principle to medicine it may be that syphilis is an offshoot of leprosy.*" A mass of fibrin is described as found in blood "taken from the system of a living man." "This fibrin skein circulates through the blood as a comet courses through the solar system," which picturesque statement will not explain how the "skein" gets through the capillary blood-vessels. In the absolutely irrelevant chapter on the death of President M'Kinley, the insertion of which is, we think, a piece of gross bad taste, we read—"When the nervous energy in a man is exhausted, the result is just as bad as though his blood-vessels were empty. The preservation of the vitality in the human economy is to-day not appreciated by the majority of men and women. This energy can leak from its channels in the body in many ways, the same as steam can leak from the boiler or cylinder of the steam engine.

If you shoot a boiler full of holes there will be no steam left to make the engine go; and so M'Kinley was shot, and his already weak vital system was drained still more." An injury to the pneumogastric nerve is said to "shut off one of the main channels through which this energy travels in going from the head to the feet." Indeed there is not a page, scarcely a sentence, in the book which is not open to the gravest criticism. As to the illustrations, which are so numerous as to justify the author in calling his work a picture-book, we have already said that, with few exceptions, they represent badly-made preparations, in which the corpuscles are so crowded together as to make it impossible to study their details. Many of the appearances described as seen in them cannot be recognised, and others are manifestly wrongly interpreted. The text is full of typographical errors. Thus we have "leucoyte" for "leucocyte," Alhanasius" for "Athanasius," "diphtheretic" for "diphtheritic," "Hellier" for "Hallier," "xglophagan" for "xylophaga," "nucleii" for "nuclei," "hemato-poetic" for "hæmato-poietic," &c., &c.

We can scarcely believe that the author seriously thinks that his work will meet with acceptance from the medical profession, even from its most credulous and ignorant members; but the book is one which might catch the fancy of the general public who are attracted by bold statements, generally the more so the more absurd they are. Inserted in the volume we find a slip containing a review, the source of which is not given. The concluding paragraph runs as follows:—"The work is unique in its style and arrangement, and will prove of the utmost value to the laboratory pathologist, to the practical doctor, and to the student of medicine. *It is, moreover, sufficiently clear and untechnical to be both interesting and instructive to the educated general reader.*"

In our opinion it is one of the worst books that it has ever been our misfortune to read.

Von der Nervenzelle und der Zelle im Allgemeinen. Von PAUL KRONTHAL. Jena: Gustav Fischer. 1902. Pp. 274.

In this work the author puts forward the view that the nerve cells are formed from aggregations of leucocytes which have

become entangled in the network of non-medullated fibres. He holds that these cells originate nothing, but serve to hold together bundles of fibres by a conducting medium, so that an impulse arriving by one thread may be transmitted to several, just as would be the case with a number of copper wires not touching, but at one point all passing through a piece of wet sponge. A current of electricity passing along one wire would, when it reached the sponge, be distributed to all the other wires passing through the latter.

The second and much the longest part of the work treats of the cell in general. The cell is, like everything that exists, only a part of Nature, which cannot exist and must not be thought of as existing apart from the whole of which it is a part. The form, function and life of the cell depend on the forces which act on it. The cell is consequently the expression of forces. Here we attain the limit of human investigation, since we do not know what force is.

The cell is an organism, biologically indivisible, although composed of organs, capable of maintaining itself or of multiplication. In all this it differs from the nerve cell, which is not an organism, is formed by the coalescence of other cells, and has no power of maintaining itself or of multiplication. Since the nerve cell originates nothing there can be no free or spontaneous thought (*kein freies Denken*). All psychical processes are the outcome of two factors which always act together—firstly, from the periphery, which is continuously exposed to the action of forces, stimuli are always reaching the central cells, which on their part transmit in a purely passive way these stimuli to centrifugal paths; secondly, these cells are continually forming and undergoing destruction, and, in consequence, there is an infinite variation in the paths followed by the nervous impulses from periphery back again to periphery. Both these factors are completely withdrawn from the influence of the individual himself.

Since all men are composed of the same matter, and exposed to the same forces, all men must resemble one another physically and psychically. The differences in thought, perception, and feeling are not greater than those in the shape of the face, length of limbs, &c., and are minimal as compared

with the whole of thought, perception, and feeling, which is the same in all men. Our thought is consequently not free, and if our actions are the outcome of our thoughts there can be no free will.

It would be unjust to the author to attempt within our limits to give an analysis of this remarkable book. It deals with a great variety of topics—life and death, free will, heredity, spontaneous generation, the origin of tumours, as well as with the cell as usually treated of. The matter is everywhere interesting and suggestive, and although we are not prepared to follow the writer in all his speculations, we can recommend the work to the attention of all those who take an interest in questions of general physiology.

The volume is admirably brought out as regards print and paper. It is illustrated by six chromo-lithographic and three helio-lithographic plates, containing numerous well-executed figures, and there are twenty-seven figures in the text. A valuable list of cytological literature and a good index enhance the value of the work.

The Work of the Digestive Glands. Lectures by PROFESSOR J. P. PAWLOW. Translated into English by W. H. THOMPSON, M.D., M.Ch., F.R.C.S. (Eng.). Illustrated. London: Charles Griffin & Co. 1902. Pp. 196.

THE results which are recorded in these lectures are the outcome of the united labour of all the workers in the Physiological Department of the Institute for Experimental Medicine in St. Petersburg. The work was designed, directed, and in greater part carried out by Professor Pawlow, the distinguished Director of the Department. But although emanating from a physiological laboratory, these lectures are in the highest degree practical. They were addressed to an audience of medical men; the volume is dedicated to the memory of an eminent physician, and the translation was undertaken with the object of placing the matter within easy reach of every English-speaking medical man. We would, therefore, in the strongest terms, recommend the work to the serious attention of every practising physician by whom the conclusions must

be tested on the human subject and their universality confirmed or the reverse.

The experiments on which these conclusions are founded were made on dogs. They are of the most ingenious design, and in many cases of difficult execution. They consist in making fistulæ into the œsophagus, so that the animals may taste, chew, and swallow food, which, however, never reaches the stomach; in making fistulæ into the stomach, pancreatic duct, gall duct, intestine, salivary ducts; and in the separation from the stomach of a portion which is made to pour its secretion out on the surface, as in the celebrated experiment of Heidenhain, but with this all-important difference, that while Heidenhain divided the nerves going to his diverticulum, Pawlow preserves them intact.

These experiments could be carried out successfully only by the strictest antiseptic methods. In the Russian laboratory there is a most complete and perfect surgical department which makes this possible, and the author calls attention to the want in most laboratories of this most essential part of their equipment.

We cannot more fully describe the details of the operative procedures, nor do we purpose giving an analysis of the work. This, to be of any use, would far exceed the limits at our disposal, but we shall confine ourselves to noticing the main conclusions arrived at, and to giving a few examples of the facts on which these conclusions rest.

The main ideas are :—

Firstly—That the action of the digestive glands is purposive, that is, the secretions, in amount and composition, are not always the same, but that they vary according to the nature of the food to be acted on, and always in such a way as to be most suitable for the work they have to do.

Secondly—That psychical impressions, more particularly desire for food, or appetite, is all-important in calling out the secretions. That the secretions are the result of the desire, and not the appetite the result of the activity of the glands.

Thirdly—That the nerves of the stomach and intestines which act reflexly on the glands are not capable of being called into action indifferently by all kinds of stimuli, but that the effective stimulus is specific and different for the different nerves.

Fourthly—That there are inhibitory as well as excitator nerves for the digestive glands.

As examples we may adduce the experiments on the pancreatic fluid with a diet of bread, meat, and milk, respectively. The greatest amount of proteolytic ferment is found on a diet of milk, less on bread, least on flesh. On a diet of bread the juice is very poor in fat splitting ferment, but on a milk diet this ferment is abundant, and with meat it is in intermediate amount; while the most amylolytic ferment is found on a bread diet, less on milk, and least on flesh.

The centrifugal nerves to the stomach and pancreas run in the vagus. If "sham feeding" be carried out—that is, if the animal gets food which falls out of an oesophageal fistula and never reaches the stomach—the glands of the stomach, and, to a less degree, the pancreas, after a latent period begin to secrete actively. The psychical stimuli which excite these secretions run in the vagi, and if these nerves be cut, even although the animal may remain in perfect health, the sham feeding calls out no secretion. In the same nerves run the inhibitory fibres for the glands. While sham feeding with food calls out an abundant secretion of gastric juice other stimuli to the mouth, acids, salines, bitters, pepper, mustard, mechanical stimulation, have no effect. It must be therefore "the eager desire for food, and the feeling of satisfaction and contentment derived from its enjoyment," which call out the secretion in sham feeding, not the chemical or mechanical stimulation of the mouth.

Mechanical stimuli directly applied to the interior of the stomach, as rubbing with a glass rod, stroking with a feather, blowing in sand, distension with an inflated India-rubber ball, call out no secretion. Water does call out secretion, but neither hydrochloric acid nor sodium chloride when dissolved in the water increases the secretion, while sodium bicarbonate manifests an inhibitory influence. Besides water, meat extract, milk, and solutions of gelatine are effective. Starch and sugar directly introduced into the stomach gave negative results, as did meat after prolonged extraction with boiling water, bread, and egg albumin.

The excitants of the pancreas are quite different from those of the stomach. Foremost among them comes acid, when

introduced into the duodenum ; starch does not increase the quantity of the secretion, but makes it richer in amylolytic ferment ; while fat, which inhibits gastric secretion, increases the flow of pancreatic juice and makes it richer in fat splitting ferment. Water excites the secretion, but neutral and alkaline salts diminish it.

In the eighth lecture it is shown how the results of experiments agree with the customs derived from instinct, and how they may guide the physician in the dietetic treatment of his cases.

The last lecture is supplementary to the others, and delivered five years later. It gives the results of further researches on the salivary secretion, and on the bile and succus entericus, and on the movements of the stomach. It also emphasises the close connection between physiology, pathology, and therapeutics, and points out that the only path along which we may hope to advance securely in the prosecution of these sciences is that of experiment. Indeed these lectures may be pointed to as a sufficient answer to the question—What has practical medicine gained by experiments on animals ?

We have possibly said enough to show that this volume abounds with information which will be of inestimable service to every medical man in the diagnosis and treatment of a difficult class of diseases hitherto most unsatisfactory to treat ; but more than that, from almost every page suggestions as to dietetics may be derived which will be applicable to all cases which he may be called on to attend. Thanks to Professor Thompson's excellent translation, the work is now accessible to all English-speaking medical men, and will doubtless receive from them the attention and recognition it deserves.

Ligaments : Their Nature and Morphology. By J. BLAND-SUTTON. Third Edition. London : H. K. Lewis. 1902. Post 8vo. Pp. viii and 112.

THE fact that this little text-book on Ligaments has so soon reached a third edition is sufficient proof that its value has been definitely appreciated. We are glad to have an opportunity of adding our testimony in its favour. It seems to us to have been conceived and delivered to the world in a

thoroughly broad-minded and philosophic medium of thought. This is refreshing to contemplate, as we have always felt that the ligaments deserve a good deal more of that kind of treatment than they usually receive. We would call the attention of our readers to the interest and value of the information given (pp. 66 and 67) on the subject of the great *pons asinorum* of syndesmology, the ligamentum teres of the hip-joint. The author defends the thesis that it is (was) a part of the pectineus muscle, detached by "skeletal modifications."

We have perused this small volume with interest and mental profit, and cordially recommend it to all *thinking* students of anatomy.

Treatise on Diseases of the Skin ; for the use of Advanced Students and Practitioners. By HENRY W. STELWAGON, M.D., Ph.D. Philadelphia and London : W. B. Saunders and Co. 1902. Pp. 1115.

Two years ago the 5th edition of Hyde and Montgomery's excellent *Treatise on Diseases of the Skin* appeared, and we have now to notice a formidable competitor in the same field. At first sight another American treatise on dermatology might appear superfluous, but a closer acquaintance with Dr. Stelwagon's book fully justifies its publication. The general arrangement and plan of both works is essentially the same. Dr. Stelwagon has, in our judgment, admirably succeeded in his task, and has produced a remarkably complete and practical work, which we can strongly recommend to the attention of our readers.

The literary style of the book is good, and is not marred by Americanisms which are apt to grate upon European taste. We can especially commend the sections devoted to treatment. They are written in a sensible and discriminating manner ; and the chapter on syphilis and its management may be singled out for particular commendation. The text is adorned by 220 illustrations, mostly photographs of merit, and there are 26 full-page lithographic and half-tone plates selected from Mraček's *Hand Atlases of Diseases of the Skin and Syphilis*.

Every practitioner who desires to possess an exhaustive and thoroughly practical manual of diseases of the skin, well up-to-date, could not do better than add this volume to his library.

Atlas and Epitome of Abdominal Hernias. By DR. GEORG SULTAN, First Assistant in the Surgical Clinic in Göttingen, Prussia. Authorized translation from the German. Edited by WILLIAM B. COLEY, M.D.; Clinical Lecturer on Surgery, Columbia University (College of Physicians and Surgeons); Surgeon to the General Memoria Hospital; Assistant Surgeon to the Hospital for Ruptured and Crippled, New York City. With 119 Illustrations, 36 of them in colours. Philadelphia and London: W. B. Saunders & Company. 1902. Pp. 227.

THE present volume is an admirable addition to the series of medical hand-atlases which have been placed before the Profession during the past few years. The descriptions of the various forms of hernia commonly met with in practice, as well as of those much rarer varieties occasionally seen, are clear and concise. The beautifully executed illustrations greatly add to the value of the descriptions. The operative procedures described and illustrated for the radical cure of inguinal hernia are those of Bassini, Kocher, and Macewen; while those described and illustrated for the radical cure of femoral hernia are the operations of Bassini and Kocher. It is to be regretted that there is no complete description given of any operative measure for the radical cure of umbilical hernia, a defect which we should like to see remedied in the next edition.

We can confidently recommend the volume to the student or practitioner.

Studies in Heterogenesis.^a By H. CHARLTON BASTIAN, M.A., M.D., F.R.S. Second Part. Williams & Norgate, 1902. Pp. 86 + vii.

IN this part of his work Dr. Bastian describes, first, the pro-

^a For notice of first part of this work see DUBLIN JOURNAL OF MEDICAL SCIENCE, Feb., 1902. P. 117.

duction of flagellate monads, amœbæ, fungus germs, and ciliated infusoria from the pellicle which forms on the surface of hay and other organic infusions. He looks on the gleeal material formed around bacteria in those aggregations of them known as zooglœa as "incipient protoplasm, or at all events a material readily convertible into protoplasm." In the case of the ciliated infusoria he points out that they develop in filtered infusions; that they are not known to be reproduced by any very minute particles having the nature of spores or germs; that when they first appear they are nearly full-sized, and are always preceded in the pellicle by encysted matrices from which they emerge. Since these matrices could not have passed through the filter it must be concluded that they have been formed in the pellicle itself.

In subsequent chapters we find an account of the evolution of Vorticellæ in and from a pellicle largely composed of Spirilla; of the transformation of Encysted Euglenæ into Ciliated Infusoria; of the Segmentation of some encysted Amœbæ, and the Conversion of the Segments into Ciliated Infusoria, or their resolution into Monads; of the transformation of the substance of the eggs of Rotifers of the genus Callidina into a new kind of Ciliate belonging to the genus Glaucoma; of the transformation, in the course of three or four days, of the entire contents of the egg of Hydatina Senta into a large Ciliated Infusorium belonging to the genus Otostoma; and of the transformation of the substance of the eggs of a Tardigrade (*Macrobiotus*) into Ciliated Infusoria.

The text is illustrated by 244 photo-micrographs, showing the several appearances on which the author founds his conclusions.

The entire work is evidently the outcome of much patient and conscientious labour, but whether the conclusions reached are just, or whether Dr. Bastian, like so many of his predecessors in this line of study, has fallen into error, subsequent research must show. At present scientific opinion is decidedly against him, and he complains of the treatment which he has received at the hands of the Royal Society and several Continental learned bodies who have

refused even to examine his work. This work cannot, however, remain fruitless. If it is right it will revolutionise a great deal of our biological views; if it is wrong it will deter subsequent workers from following an *ignis fatuus*.

The Journal of Obstetrics and Gynaecology of the British Empire. Vol. I.

THE volume before us constitutes the first twelve monthly numbers of a Journal that has for its object the representation of British thought in this special department of surgery throughout the entire Empire. In addition to this—its primary object—it also affords a short *résumé* of current literature selected from foreign sources.

The introductory article is from the pen of Dr. J. Cullingworth. In it he analyses one hundred cases of uterine fibromyomata, in which the conditions of the tumours and the complications to which they had given rise were verified by operation.

Obstetrics at the beginning of the Twentieth Century is the title of a rather scrappy contribution by Dr. Berry Hart. The latter author is responsible for three other articles to the volume, all of them of greater value than this one.

Milne Murray records a case of spontaneous rupture of the uterus at the commencement of labour. We cannot but think that this and other similar cases which have been reported are in reality the re-opening with, perhaps, extension of a uterine rupture sustained in a former labour.

A scholarly treatise by Dr. J. Henderson on the maternal blood, and an excellent paper by Eden on the toxæmic theory of pregnancy, will each well repay a close perusal.

Dr. Clarence Webster writes on two specimens of placenta prævia, and illustrates his paper by plates taken from his valuable section.

Dr. G. F. Blacker's paper on vaporisation of the uterus will be found most instructive.

Did space permit, attention could be called to innumerable contributions of no less importance than those cited, and the Journal is greatly to be congratulated on the eminence of its contributors.

When we turn to the portions of these monthly journals set apart for selections and translations from current literature, a word of advice may not be out of place. It is to this section that a publication such as this must look for its chief source of popularity amongst the reading public. By it the Journal must stand or fall. The fact cannot be denied that there are many serious competitors in this department, not alone from English, but likewise from American sources.

It is therefore a vital matter for the Journal of British Authors not to be merely good. In this respect it must be the very best.

It is unreasonable to expect that the average man has either time or inclination to multiply the number of his special journals, and it does not require much foresight to perceive that his choice will eventually fall on that which keeps him abreast of the latest foreign opinion in the most efficient manner.

Surgical Ward Work and Nursing: A Handbook for Junior Students of Medicine and Nurses. By ALEXANDER MILES, M.D., C.M., F.R.C.S. Edin. Second Edition. London: The Scientific Press, Limited. 1899. 8vo. Pp. viii. + 288.

It has been, on a former occasion, our privilege to review and to recommend this useful little book to those for whom it is intended. It is, therefore, with great pleasure that we receive a copy of the second edition. The scope of its pages embraces matters which, as the author remarks, are not to be found in treatises on surgery in general, and to which on entering the profession the student finds himself, as a rule, a complete stranger. Such are—the names and various forms of the different instruments used in surgery; articles on bandaging. &c.; and a whole host of small details which would otherwise never occur, in all probability, to the mind of a beginner. The chief additions are in those sections dealing with aseptic procedures in surgical operations, and with the after-treatment of operation cases. The chapter on the antiseptic spray has been omitted. The illustrations, at which before we were somewhat apt to cavil, have been to a large extent replaced,

and several photographs have been introduced, thus largely increasing the utility of the work. We have again much pleasure in bringing before the notice of our readers Mr. Miles's book, by the perusal of which they are certain to derive much information of a practical and beneficial nature.

We tender to the author an apology for the delay which has occurred in connection with the publication of this notice of the second edition of his book.

Diseases of the Pancreas and their Surgical Treatment. By A. W. MAYO ROBSON, F.R.C.S.; Senior Surgeon, Leeds General Infirmary; Emeritus Professor of Surgery, Yorkshire College, Victoria University; Member of Council and Hunterian Professor, Royal College of Surgeons of England; Honorary President, Surgical Section, International Medical Congress, 1900; and B. G. A. MOYNIHAN, M.S. (Lond.), F.R.C.S.; Assistant Surgeon, Leeds General Infirmary; Consulting Surgeon to the Skipton Hospital and to the Mirfield Memorial Hospital; Arris and Gale Lecturer and Member of the Board of Examiners in Anatomy for the Fellowship, Royal College of Surgeons of England. Illustrated. Philadelphia and London: W. B. Saunders & Co. 1902. Pp. 293.

THE present volume is dedicated to the Surgeons of America, in cordial recognition of their work, and took its origin from the papers of Mr. Mayo Robson, read before the London Polyclinic in June, 1900, on the relation of chronic pancreatitis to cholelithiasis, and introductory to the discussion on diseases of the pancreas at the International Medical Congress at Paris, as well as his paper on pancreatitis, read before the American Surgical Association in May, 1901. In the production of the volume Mr. Moynihan has collaborated with Mr. Mayo Robson, with the result that there is now placed before the profession an exhaustive treatise on diseases of the pancreas, embodying their own experience as well as giving an epitome of the writing and experience of other distinguished observers and workers.

Chapter I. is devoted to the anatomy of the pancreas, while Chapter II. gives an interesting and instructive

account of the experimental work on the functions of the pancreas.

Chapter III. deals with injuries of the organ. Short accounts are given of fourteen cases of injury of the pancreas, all of which proved fatal. Most of these were associated with injuries to other organs, but the cases of rupture of the pancreas, apart from other abdominal injuries, are those reported by Jann, Wilks & Moxon, and Wagstaff. Other cases are reported in which the injury was not so severe, and in which recovery followed operative interference. "In these cases of less extensive rupture, involving the overlying and adherent peritoneum, the symptoms and signs are those of effusion into the lesser sac of peritoneum." . . . "Experimental work has shown that wounds of the pancreas can be sutured, and that healing speedily takes place."

In Chapter VI., on pancreatitis in general, will be found much food for reflection, and much to suggest a line along which experimental research might with advantage be directed. There is still much doubt as to the causation of "fat necrosis," which is so widespread in some cases of acute pancreatitis, while in others it is only met with to a limited extent, and in other cases still is conspicuous by its absence. Then again the very severe hæmorrhage met with after operation in cases of jaundice associated with disease of the pancreas as compared with that following operations performed on patients suffering from jaundice unassociated with pancreatic trouble, suggests that its causation should be sought for in the pancreatic disorder. The authors suggest that this hæmorrhagic tendency may possibly be due to the glycerine set free in the tissues by the fat necrosis. In support of this we have the well-known fact that hæmorrhage, and especially hæmaturia, occurs as one of the phenomena of glycerine poisoning. The pertinent question—"Can it be due to something absorbed from the pancreas into the blood, which only acts when the absorption has been occurring over a prolonged period of time?"—yet remains to be answered.

In Chapter V. will be found an account of acute pancreatitis, its symptoms, diagnosis, pathology and treatment. The marked tendency to collapse and shock met with in this disease is attributed to the close relation of the pancreas to the

solar plexus. Many cases illustrative of acute gangrenous, hæmorrhagic, and suppurative pancreatitis are detailed, a study of which will largely assist the reader in arriving at a diagnosis of this most difficult of abdominal lesions to diagnose. The treatment of acute pancreatitis is that of exploring from the front, and then, after establishing the diagnosis, draining from the back, so as to evacuate the septic material, secure free drainage, and arrest hæmorrhage which may lead to disintegration and necrosis of the organ.

Chapter VII. tells us everything that is known about chronic pancreatitis, a number of illustrative and instructive cases being appended.

Chapter IX. on pancreatic cysts occupies about one-fourth of the book. The classification of cysts adopted is—

- I. Retention cysts.
- II. Proliferation—cystic adenoma,
cystic epithelioma.
- III. Hydatid.
- IV. Congenital cystic disease.
- V. Hæmorrhagic cysts.
- VI. Pseudo-cysts.

Each variety is fully described, and the chapter concludes with an account of some cases under the author's care, all of which, with one exception, made a satisfactory recovery after operation.

The closing chapter is devoted to a consideration of the new growths met with in the pancreas.

The errors in the book are few indeed. On page 220, in speaking about pseudo-cysts the authors state that they may be found between the layers of the transverse colon, &c. Of course this should read transverse meso-colon. On page 253, the word "intestinal," seven lines from the bottom of the page, should read "interstitial." The word "rigor" is invariably "rigour." We do not say it is absolutely wrong, but in modern English we are not accustomed to see the word "rigour" used in this sense.

The volume is one which should be in the possession of every hospital surgeon. We heartily congratulate the authors on their success. The type, paper and binding are all that could be desired.

A Manual of Medicine. Edited by W. H. ALLCHIN, M.D. Lond., F.R.C.P., F.R.S. Ed. Vol. IV. Diseases of the Respiratory and of the Circulatory Systems. London: Macmillan & Co., Ltd. New York: The Macmillan Co. 1902.

Of the three preceding volumes of Dr. Allchin's *Manual of Medicine* it has been a pleasing duty to speak in terms of laudation. The 4th volume, which is now on the shelves of the booksellers, is in every way worthy to join with its predecessors, and should occupy a position for ready reference in the study of every medical practitioner who desires to have a concise statement on modern views as applied to the respiratory and circulatory systems. It is to teachers of clinical medicine, however, that the text-book now under review will appeal most strongly—for anatomy, physiology, and pathology form an integral part of the contents of the work, and what teacher can have any pretence of making his clinical instruction of real value who omits to lead the minds of his students from the normal to the abnormal in the cases which seek for hospital treatment? It is not possible for a busy clinician to keep himself thoroughly versed in the recent advances of physiology and pathology as found in special text-books on these subjects, nor can he hope to escape from the rustiness which inevitably follows the absence of a particular study of anatomy and physiology; but we venture to think that the majority of clinical teachers will find in the articles introductory to the various diseases dealt with by the contributors to Dr. Allchin's manual an epitome which should satisfactorily serve to refresh their memories on the matter above mentioned.

To the general practitioner the symptomatology, prognosis and treatment of disease are the points of greatest significance, so that in his case the manual is probably in some respects unnecessarily instructive. At the same time it may be pointed out that diagnosis, prognosis and treatment will be found to have received their fair share of attention, and indeed it may be mentioned that from the first the aim of the editor has been "to present such a picture of the several maladies as will conform to the appearances detected at the bedside and enable the observer rationally to administer such treatment as our art affords."

It is unnecessary, therefore, in reviewing the work to go into a detailed criticism of the subject matter of each article and point out omissions that must, as a matter of course, have occurred ; but it is quite sufficient to name the several contributors and point out the nature of their contributions. Dr. Allchin himself furnishes the chapters on "Disorders of the Diaphragm" and on "Dropsy." He has produced also two coloured plates by Professor Thane, showing, by means of diagrams, the relations of the thoracic viscera, &c., to the skeleton, as well as a table adapted from Quain's Anatomy "showing the levels of the various structures in the thorax in relation to the spines and bodies of the vertebræ."

Dr. Lewis Smith, Physician to the Poplar Hospital, has been entrusted with the "Disorders of the Upper Respiratory Tract," of which the chapters on epistaxis, adenoids, and hay fever will be read with most interest.

"Diseases of the Lower Respiratory Tract" are dealt with in a most excellent manner by Dr. Hector Mackenzie. The chapters on General Symptomatology and on Physical Examination are concisely and methodically written, and the same may be said of the articles pertaining to the various diseases of the lungs.

Dr. Francis De Haviland Hall contributes thirty pages on Diseases of the Pleura and Mediastinum.

Dr. Leonard Hill, Lecturer on Physiology in the London Hospital, writes very admirable articles on "the Physiology of Respiration" and "the Physiology of the Circulation."

And finally, Dr. J. Mitchell Bruce has proved himself well qualified to undertake the production of the important chapters dealing with Diseases of the Heart and Blood Vessels.

It is particularly on the treatment in disease of the heart that Dr. Mitchell Bruce excels in his writing. He dwells at considerable length on this most important matter. There is a short chapter devoted to the general treatment of (a) acute cardiac disease, (b) chronic cardiac disease, with compensation, (c) failing compensation and cardiac failure, and (d) chronic myocardial disease originating in insidious degeneration. But further than this he gives the treatment of the individual affection of the heart, and in every case a study of the principles and methods advocated by him will repay careful perusal.

The fifth, which is the final, volume of the series has been set apart for "Diseases of the Digestive System and of the Kidneys." The publication of this instalment will be looked for eagerly by the medical men and students who have already subscribed for the previous volumes.

It may be noted that the publishers have taken advantage of the production of the 4th volume to add a catalogue of their medical text-books, which extends over sixty odd pages, and therefore materially increases the size of the volume. This is a policy to be deprecated.

DIRECTORIES FOR 1903.

1. *Who's Who*, 1903. An Annual Biographical Dictionary. Fifty-fifth Year of Issue. London : Adam & Charles Black. 1903. 8vo. Pp. 1532.
2. *The Englishwoman's Year-Book and Directory*, 1903. Fifth Year of New Issue. Edited by EMILY JAMES, Organising Secretary to the National Union of Women Workers of Great Britain and Ireland. Twenty-third Year. London : Adam & Charles Black. 1903. 8vo. Pp. 340.

1. MESSRS. A. & C. BLACK'S "Who's Who" is so widely known and appreciated that it is not necessary for us to do more than announce the publication of the issue for 1903. The work, as heretofore, consists of two parts. But Part I. in the present edition has reached almost the vanishing point—a matter for very sincere regret. It now occupies only 4 out of the 1532 pages which make up the book. Two of the four pages contain information about the Royal Family. The remaining two pages record the deaths of well-known personages who passed away in the year ended September 30, 1902. In this list we notice the name of our much-lamented fellow-citizen, Mr. John Hatchell, whose death, however, occurred on August 27, 1901, not 1902, as printed in the "Obituary."

The "Biographies" are, as usual, full of interest, possessing, as they do, a strong personal tone. When we are told that every biography has been submitted for personal revision, and that this year's issue contains over 15,000 biographies,

the labour involved in the publication of such a book of reference becomes apparent. We have only to add that the medical profession receives due recognition in the pages of "Who's Who."

2. "The Englishwoman's Year-Book and Directory" for 1903 appears to be also a very useful work. In the words of the Editor, "it aims at giving some idea of the extent of women's work and interests, and some guidance to those who want to help their fellow-creatures, whether as individuals they live lives centered (*sic*) round their own home, or take a wider view of their opportunities and responsibilities."

We wish the publication every success in its beneficent work.

*Verhandlungen des Vereins für innere Medizin in Berlin.
Herausgegeben von dem Vorstande des Vereins. Jahrgang XXI. 1901-1902. Berlin. 1902. Pp. 502*

THE number and value of the papers contained in this volume, and the great variety of the subjects with which they deal, are signal proofs of the vitality of the celebrated Society whose transactions are here recorded. It would, of course, be impossible for us to give even the titles of all the communications here brought together. We may, however, notice briefly a few, taken very much at random. Several cases of acromegaly are reported by A. Fränkel and Stadelmann, and a valuable report on the changes in the pituitary body is given by Benda. In the four cases examined the changes were confined to the anterior or glandular lobe; the posterior or nervous lobe took no part in the tumour. In two cases the growth was purely adenomatous; in the other two it showed more or less evidence of malignant degeneration. In three of the cases the newly-formed gland cells were largely of the granular kind, which is believed to indicate a condition of activity. From this it is concluded that in acromegaly the pituitary gland is in a condition rather of increased than diminished activity as compared with its normal state. It may be added that Fränkel found no benefit to result from the administration of pituitary tabloids in his cases.

A paper by J. Hirschfeld, on Diabetes following accidents, gave rise to a very prolonged discussion, extending over several sittings. Stadelmann reports some interesting clinical and therapeutical observations on Phthisis. It has been frequently stated of late that in cases of this disease accompanied by high fever, and more particularly where the urine gives the diazo reaction, bacteria, chiefly staphylococci, are to be found in the blood. Stadelmann and his assistant, Lasker, examined 68 cases, and found bacteria (streptococci) only in one case. The condition must, therefore, be one of great rarity, and cannot be the cause of the fever of phthisis. Of the cases examined 26 gave the diazo reaction in the urine.

The diazo reaction has been looked on as a symptom of very bad omen in phthisis. In order to determine its value 152 cases were examined. From the results it is concluded that it has no value in diagnosis, but some prognostic importance. This is given only by its presence, for in 69 severe cases it was absent in 31, or from 40 to 50 per cent. When present it has value only if persistent, for many slight cases show it transitorily. If persistent even in apparently light cases it suggests a very guarded prognosis. Its occurrence, unless persistent, must not exclude a patient from a sanatorium, if the case appears otherwise suitable.

The presence of eosinophile cells in the sputum has been looked on as a good sign, and has been supposed to show that in the struggle between the bacilli and the organism the latter was getting the better. Stadelmann and F. Meyer examined 82 cases, 77 of which were unquestionably tubercular, and 5 doubtful. In only 15 cases (18 per cent.) of these were eosinophile cells found. Their presence bore no relation to the number of tubercle bacilli or to the course of the disease, nor was any increase of the cells observed during or after treatment by Koch's tuberculin. The conclusion is that eosinophile cells in the sputum of a phthisical patient are without prognostic value.

Valuable results are got in the sweating of phthisis by treatment by guacamphol, and in the pyrexia by treatment with pyramidon and its salts.

Kaminer, in a long and interesting paper, shows that pregnancy exerts an unfavourable influence on the course of phthisis, and that it is a distinct misfortune to a phthisical woman to get in the family way. He thinks that in many cases it is justifiable to induce abortion, as this operation is less injurious than a natural delivery at full time.

Strauss describes a clinical method for the quantitative determination of indican in the urine; and Bial gives a simplified and improved method for determining the presence of pentoses in the urine, which may be used clinically to distinguish these substances from diabetic sugar.

For the very many other valuable papers we must refer our readers to the volume itself.

Transactions of the Association of American Physicians.

Sixteenth Session. Philadelphia: Printed for the Association. Pp. 738.

THESE valuable Transactions contain, as usual, matter of much interest and importance. Drs. Reed, Carroll, and Agramonte contribute an account of some remarkable work done in connection with Yellow Fever. By means of experiments on a number of United States soldiers, who volunteered for the purpose, they proved satisfactorily that the disease could be conveyed by hypodermic injection of the blood of patients suffering from the disease, and, more important still, that a mosquito (*Culex Fasciatus*) can convey the disease from the sick to the healthy. These experiments are referred to in many recent works on Medicine; it is interesting to have here an original report.

Drs. Billings and Henry furnish papers on Pernicious Anæmia. Acute Pancreatitis is treated by several members. Dr. Opie concludes that when a gall-stone is impacted in the common duodenal opening of the ducts of the liver and pancreas, bile enters the pancreas by way of the pancreatic duct and causes inflammation; experimental injections of bile into Wirsung's duct has the same effect. Injections of acids also cause hæmorrhagic pancreatitis and fat necrosis,

Dr. Edes has a careful paper on Slow Pulse and the Stokes-

Adams' Disease. There are several papers on the Acid-intoxication of Diabetic Coma.

These are merely some papers we have glanced at, but there are many others which will well repay perusal in this volume, which, in our opinion, is certainly one of the best of the volumes of "Transactions" which are annually published.

International Clinics. Volume II. Twelfth Series. 1902.
London: J. B. Lippincott Co. Pp. 295.

EACH volume of this series contains a miscellaneous collection of articles similar in nature and scope to many of the papers that appear in the weekly and monthly medical journals, divided under the headings of Therapeutics, Medicine, Surgery and Obstetrics.

Under the first head we have a paper by Prof. Lépine on the Treatment of Diabetes Mellitus, in which the author states that in some cases he finds (contrary to the generally received opinion) that saccharose is less injurious than starch, inasmuch as saccharose is in the alimentary canal converted as to half its weight into levulose, and it has been repeatedly found that levulose is better borne than glucose.

Prof. Finger writes at some length on the treatment of gonorrhœa.

Under the heading of Medicine Dr. Daniel carefully describes some cases of pancreatic cysts. Dr. Douglas discusses the cause of diabetic coma. Prof. Hemmeter writes on gastro-intestinal auto-intoxication.

In the section on Surgery Prof. Jonnesco, in a paper illustrated with notes and photographs of cases, advocates the resection of the cervical sympathetic for Graves's disease. Some of the photographs show much improvement after the operation. Dr. Gibbs records some remarkable recoveries from gunshot wounds of the central nervous system received during the late war in South Africa.

The work concludes with a review of some of Professor Pavlof's (or Pawlow's) work on the digestive glands.

PART III.

MEDICAL MISCELLANY

Reports, Transactions, and Scientific Intelligence.

THE CENSUS OF IRELAND, 1901.

THE REGISTRAR-GENERAL FOR IRELAND, Mr. Robert E. Matheson, LL.D., has courteously presented the Editor of this Journal with Part II. of the Census of Ireland for the year 1901, being the General Report of the Census Commissioners, with illustrative maps and diagrams, tables, and appendix.

The Census Commissioners were the Registrar-General himself, Mr. T. J. Bellingham Brady, LL.D., Assistant Commissioner, Intermediate Education Board for Ireland, and Mr. Robert J. Brew, the Assistant Registrar-General. The General Report was presented to his Excellency George Henry Earl Cadogan, K.G., Lord Lieutenant General and General Governor of Ireland, on June 30, 1902, that is to say, within fifteen months of the date of Census Night, March 31, 1901.

Facts of interest to both statistician and physician abound in the pages of the General Report. It is, therefore, not necessary to offer any apology for transferring to the pages of this Journal a concise summary of the principal results of the Census.

The Report opens with an interesting account of the earlier attempts which had been made to ascertain the population of Ireland. The first attempt worthy of notice was that made by the celebrated Sir William Petty in the second half of the seventeenth century. His estimation, taken in the year 1672, gives a total of 1,100,000 souls. In 1731, a rough and unsatisfactory, because imperfect, Census was taken through the medium both of the Magistracy and of the Established Clergy. The population is stated to have been 2,010,221.

Subsequent estimations gave the following results :—

1754	..	..	..	2,372,634.
1767	..	..	..	2,544,276.
1777	..	..	..	2,690,556.
1785	..	..	..	2,845,932.
1788	..	..	..	4,040,000.
1791	..	..	..	4,206,612.
1805	..	..	..	5,395,456.

The estimations for 1788 and 1791 are based on the returns of the Hearth-money Collectors, and are calculated on the average of six souls to a house. Accordingly, they do not count for much.

The first attempt to take an Official Census in this country was made in 1813, pursuant to an Act passed in 1812. Under this statute the supervision of the enumeration was entrusted to the Grand Juries of the several counties. This inquiry failed.

The Census of 1821 was taken under the supervision of the Magistrates at Quarter Sessions and the Assistant Barristers, and the results of this, the first authoritative and complete Irish Census, were presented to the public in 1823. A second enumeration of the people took place in 1831, and was subjected to examination and correction in 1834.

The Census of 1841 opened a new era in Irish Statistics. The Commission consisted of Messrs. W. Tighe Hamilton, Henry J. Brownrigg, and Captain (afterwards Sir) Thomas A. Larcom, R.E. It was then for the first time that the Ordnance Survey Maps were available, and a regularly organised police force—the Royal Irish Constabulary—at hand, from which a corps of enumerators could be selected. Many new lines of investigation were entered upon, including an inquiry into the deaths during the ten years ending June 6, 1841.

The Census of 1851 was taken under the superintendence of the then "Registrar-General of Marriages," Mr. William Donnelly, assisted by Dr. (afterwards Sir) William R. Wilde. The chief features of that enumeration were the School Census and a valuable Report on the Status of Disease. The latter, in addition to treating of the number of persons suffering from sickness, dealt with the deaf and dumb, the blind, the lunatic and idiotic, and the lame and decrepit. An interesting Table of cosmical phenomena, epizootics, famines and pestilences, in Ireland, extracted from the earliest published records, formed an attractive feature in this Report. It was compiled by the Assistant Commissioner, aided by two eminent Irish Scholars, Dr. O'Donovan and Mr. Eugene O'Curry, M.R.I.A.

The Census of 1861 was taken under the direction of the Registrar-General (Mr. Donnelly), acting as Chief Commissioner, with Dr. W. R. Wilde and Dr. G. W. Abraham as Assistant Commissioners. An inquiry was for the first time made into the Religious Professions of the people, and the Tables exhibited Education in connection with Religious Profession. The Report was included in five volumes, of which two dealt with Ages and Education.

two with Deaths and the Status of Disease ; while the fifth volume was devoted to the subjects of Religious Professions, Education and Occupations. A "General Report" completed the series of volumes.

In 1871, the *personnel* of the Commission was the same as in 1861, save that the Board consisted of three Commissioners. The Census volumes included two on Vital Statistics.

The Commissioners for taking the Census of 1881 were Dr. Thomas W. Grimshaw, Registrar-General ; Dr. G. W. Abraham, and Mr. Robert E. Matheson. Information relating to the occupations or social condition of the inhabitants of the Dublin Registration District was published for the first time. The Report also included a series of Tables showing the area and valuation of agricultural holdings.

In 1891, the Commissioners were Dr. Grimshaw, Registrar-General, who shortly afterwards received the Companionship of the Order of the Bath for his conspicuous services ; Dr. T. J. Bellingham Brady, and Mr. Robert E. Matheson.

The population of Ireland, according to the several Census Returns just mentioned, was as follows :—

Years		Males		Females		Total
1821	..	3,341,926	..	3,459,901	..	6,801,827
1831	..	3,794,880	..	3,972,521	..	7,767,401
1841	..	4,019,376	..	4,155,548	..	8,175,124
1851	..	3,190,630	..	3,361,755	..	6,552,385
1861	..	2,837,370	..	2,961,597	..	5,798,967
1871	..	2,639,753	..	2,772,624	..	5,412,377
1881	..	2,533,277	..	2,641,559	..	5,174,836
1891	..	2,318,953	..	2,385,797	..	4,704,750

The "high tide" of the population of Ireland occurred in the year 1845—just before the terrible Potato Famine. The estimated population in that year was 8,295,061 souls ; the males numbering 4,083,043, and the females 4,212,018. These figures were arrived at from the Irish Census Report of 1841 by taking the English average birth-rate of 1 in 31, and death-rate of 1 in 45, and deducting the annual emigration from Ireland according to the returns received from the Emigration Commissioners in England.

The recent Census of 1901 was taken under circumstances of peculiar difficulty owing to the entire re-arrangement of the territorial divisions of the country consequent on the passing of the Local Government (Ireland) Act of 1898. The warrant appointing the Census Commission was received on December

12, 1900, and the Commissioners held their first meeting on that date. The country was apportioned into 208 Enumeration Districts—202 officers of the Royal Irish Constabulary and 6 officers of the Dublin Metropolitan Police acted as Superintendents of Enumeration. Under the control of each Superintendent were a certain number of Enumerators, amounting altogether to 3,941—viz., 3,790 members of the Royal Irish Constabulary and 151 members of the Dublin Metropolitan Police.

The necessary forms and instructions were despatched to the Superintendents of Enumeration before March 11, 1901, the day fixed for the opening of the parcels and the commencement of the distribution of the forms. The distribution of the forms was completed on March 30, and the collection of the returns commenced on April 1. As in 1891, returns for every house in which there was a case of infectious disease were enclosed in specially prepared double sets of impervious covers, and forwarded to the Census Office, where they were disinfected. When the collection of the returns from his district was completed, each enumerator proceeded to make a summary of the results. On May 17, 1901, the Commissioners forwarded to His Majesty's Government, for presentation to Parliament, their Preliminary Report with an Abstract of the Enumerators' Summaries. The manuscript of the Census Book for County Carlow, the first of the series of County Books, was forwarded to the printer on July 24, 1901, and that Book was presented to His Excellency Earl Cadogan, K.G., on October 24, 1901, as the first instalment of the Census of 1901.

The following is a concise summary of the principal results of the Census :—

Persons.—The population of Ireland in 1901, including the Navy and Military serving in the country, was 4,458,775 (2,200,040 males and 2,258,735 females). In 1891 it had been 4,704,750 (2,318,953 males and 2,385,797 females). There was, therefore, in the ten years a decrease of 245,975 persons, or 3·23 per cent.

Ages.—There is a marked diminution, amounting to 12·2 per cent., in the number of children and young persons under 20 years of age in 1901 compared with 1891. There is also a decrease in the number of persons in the age periods from 40 to 55, and from 70 upwards, amounting to 8·6 and 11·7 per cent. respectively.

Conjugal Condition.—The number of married persons in 1901 was—males, 578,491; females, 530,907. In 1891 they were

respectively 613,649 and 626,031. Widowers and widows were 88,034 and 211,031, compared with 91,500 and 232,004 respectively in 1891. The unmarried were—males, 1,533,515; females, 1,456,797; the corresponding figures for 1891 being 1,613,804 and 1,527,762.

Birth-places.—In 1891 the number of Irish-born persons enumerated who did not reside in the county in which they were born amounted to 10·8 per cent. of the population. In 1901 they amounted to 11·1 per cent., or an increase of 0·3 per cent. In 1891 the number of persons born in England enumerated in Ireland amounted to 74,523; in 1901 the number was 76,977, being an increase of 2,454, or 3·3 per cent. The number of natives of Scotland in Ireland in 1891 was 27,323; in 1901, 30,101, or an increase of 10·2 per cent. The number of persons born outside the United Kingdom who were in Ireland on the Census night in 1891 was 21,521, and in 1901, 24,750, or an increase of 15·0 per cent.

Religious Professions.—"Roman Catholics" decreased from 3,547,307 in 1891 to 3,308,661 in 1901, or 6·7 per cent. "Protestant Episcopalians" ("practically 'The Church of Ireland,'" as the Registrar-General rather oddly phrases it) decreased from 600,103 in 1891 to 581,089 in 1901, or 3·2 per cent. "Presbyterians" decreased 0·4 per cent., their number being 443,276 in 1901, as against 444,974 in 1891. "Methodists" showed an increase from 55,500 in 1891 to 62,006 in 1901, or 11·7 per cent. All other persuasions increased from 56,866 in 1891 to 63,743 in 1901, being an increase of 12·1 per cent. There were 3,898 "Jews."

Education.—In 1901 the number of persons in Ireland five years old and upwards who were wholly illiterate was equal to 13·7 per cent. of the population; in 1891 the percentage was 18·4, showing a decrease in 1901 of 4·7 in the percentage. The number of persons aged five years and upwards in 1901 who could read only was 6·9 per cent. of the population; in 1891 the percentage was 11·0, showing a decrease in 1901 of 4·1 in the percentage. In 1891, 70·6 per cent. of the population aged five years and upwards were able to read and write; in 1901 the percentage was 79·4, showing an increase of 8·8 in the decade.

Schools and Scholars.—In 1901 there were returned 9,157 establishments for primary instruction, attended by 636,777 pupils. In 1891 the number of establishments was 9,177, and the number of pupils 685,074, showing a decrease of 48,297 pupils, or 7·0 per cent. In 1901 there were 510 establishments

(including Colleges) for superior instruction, with 38,565 students, and in 1891, 490, with 27,769 students, showing an increase of 10,796 students, or 38·9 per cent.

Occupations.—The Professional Class in 1891 numbered 214,243, or 4·55 per cent. of the population. In 1901 it numbered 131,035, or 2·94 per cent., a decrease of 1·61 in the percentage. This reduction is the result of the transfer, on the present occasion, to the "Indefinite and Non-productive Class," of large numbers of persons aged 15 years and upwards returned as "Scholar," &c., who in 1891 and previous Censuses were tabulated as "Students" and included in the Professional Class.

The Domestic Class in 1891 amounted to 255,144, or 5·42 per cent. In 1901 it was 219,418, or 4·92 per cent., a fall of 0·50 in the percentage.

The Commercial Class in 1891 was 83,173, or 1·77 per cent. In 1901 it had risen to 97,889, or 2·20 per cent., an increase of 0·43 in the percentage.

The Agricultural Class in 1891 numbered 936,759, or 19·92 per cent. In 1901 it had fallen to 876,062, or 19·65 per cent., a decrease of 0·27 in the percentage.

The Industrial Class in 1891 was represented by 656,410 persons, or 13·95 per cent. In 1901 the number was 639,413, or 14·34 per cent., an increase of 0·39 in the percentage.

The Indefinite or Non-productive Class.—The number tabulated in this class for 1891 was 2,559,021, or 54·39 per cent. In 1901 it was 2,494,958, or 55·96 per cent., an increase of 1·57 per cent. This increase is accounted for by the transfer from the Professional Class (see above).

Families.—The number of families in 1901 was 910,256 ; in 1891 the number was 932,113, showing a decrease of 2·3 per cent. in 1901.

Houses.—The inhabited houses decreased from 870,578 in 1891 to 858,158 in 1901, or 1·4 per cent. Houses of the first class increased from 70,740 to 75,225, or 6·3 per cent. Second class houses increased from 466,632 to 521,454, or 11·7 per cent. The number of third class houses is 251,606, against 312,589 in 1891. This represents a decrease of 60,983, or 19·5 per cent. ; and fourth class houses (mud cabins) decreased from 20,617 in 1891 to 9,873 in 1901, or 52·1 per cent.

The plan of Classification is the same as that adopted in former Censuses, and may be thus described :—

The value or condition of a house, as to its quality, may be

considered to depend mainly on :—1st, its extent, as shown by the number of rooms ; 2nd, its quality, as shown by the number of its windows ; and 3rd, its solidity or durability, as shown by the material of its walls and roof. If numbers be adopted to express the position of every house in a scale of each of these elements, and if the numbers thus obtained for every house be added together, a new series of numbers will be produced, giving the position of each house in a scale compounded of all the elements—i.e., their actual state.

Four classes have been adopted, and the result is, that in the lowest of the four classes are comprised houses principally built of mud or other perishable material, having only one room and window ; in the third a better description of house, varying from one to four rooms and windows ; in the second, what might be considered a good farm-house, having from five to nine rooms and windows ; and in the first class, of all houses of a better description than the preceding.

The accommodation which the houses afford has also been arranged under four classes, viz. :—First class accommodation, consisting of first class houses occupied by one family. Second class accommodation, consisting of second class houses occupied by one family, or of first class houses occupied by two or three families. Third class accommodation, comprising third class houses with one family each, or second class houses with two or three families, or first class houses occupied by four or five families. Fourth class accommodation includes all fourth class houses, third class houses with more than one family, second class houses with four or more families, and first class houses inhabited by six or more families.

Rateable Valuation.—The rateable valuation of Ireland rose from £14,034,681 *ls. 9d.* in 1891 to £14,932,754 *ls.* in 1901, or 6·4 per cent.

Births.—From April 1st, 1891, to March 31st, 1901, 1,052,729 births were registered, against 1,147,321 during the preceding ten years.

Marriages.—The marriages registered amounted to 221,582, the number in the previous ten years being 212,256.

Deaths.—The deaths were 834,552, against 879,412 for the previous decade.

Emigration.—The number of emigrants from Ireland during the decade was 430,993 (200,125 males, and 230,868 females) ; in the previous decade the emigrants amounted to 768,105.

Sickness.—The sick and infirm of all kinds on Census night of 1901 numbered 68,862, or 1 in 65 of the whole population. Of these, 35,588 were temporarily diseased, and 33,274 permanently diseased. In 1891 the number of sick and infirm on Census night was 66,664, or 1 in 71 of the whole population. Of these, 35,722 were temporarily diseased, and 30,942 permanently diseased.

Blind.—The number of the totally blind in Ireland in 1901 was 4,253. In 1891 the number was 5,341.

Deaf and Dumb.—The deaf and dumb numbered in 1901 3,076; in 1891 their number was 3,365.

Dumb, not Deaf.—The number tabulated under this heading in 1891 was 1,099, and in 1901 it was 895.

Lunatics and Idiots.—The total number of lunatics and idiots returned in 1891 was 21,188, and in 1901 the number amounted to 25,050. The number of lunatics enumerated on Census night of 1901 was 19,834 (10,213 males, and 9,621 females), of whom 596 were at large, 16,587 were in asylums, and 2,651 in workhouses. In 1891 the number of lunatics was 14,945 (7,463 males, and 7,482 females), 893 being at large, 11,265 in asylums, and 2,787 in workhouses. There were, in 1901, 5,216 idiots (2,946 males, and 2,270 females), of whom 3,272 were at large, 763 in asylums, and 1,181 in workhouses. In 1891 there were 6,243 idiots (3,501 males, and 2,742 females). Of these, 4,077 were at large, 996 in asylums, and 1,170 in workhouses. A decrease in the number of persons returned as idiots, and an increase in the number of lunatics, also appeared in the Census of 1891, as compared with that of 1881.

Division of Land.—In 1901 the total extent under crops (including meadow and clover) was 4,631,051 acres, in 1891 it was 4,818,381 acres. The extent under grass in 1901 was 10,577,238 acres, against 10,298,654 acres in 1891. Woods and plantations in 1901 occupied 309,741 acres, as against 311,554 acres in 1891, and turf bog, marsh, barren mountain, roads, fences, &c., represented 4,710,162 acres in 1901 and 4,769,677 acres in 1891.

Land under Crops.—In 1901 the extent of land under cereal crops was 1,317,574 acres, under green crops 1,079,443 acres, under flax 55,442 acres, and under meadow and clover 2,178,592 acres. In 1891 the acreage under cereal crops was 1,492,763, under green crops 1,191,424, under flax 74,665, and under meadow and clover 2,059,529.

Live Stock.—The number of live stock in 1901 was as follows :—Horses and mules 593,798, asses 238,980, cattle 4,673,323, sheep

4,378,750, pigs 1,219,135, goats 312,409, and poultry 18,810,717. In 1891 the numbers were—horses and mules 621,479, asses 216,268, cattle 4,448,516, sheep 4,722,613, pigs 1,367,712, goats 336,337, and poultry 15,276,128.

Language.—The number of persons returned as speaking Irish only in 1901 was 20,953, or 0·47 per cent. In 1891 the number so returned was 38,192, or 0·81 per cent. The persons who could speak "English and Irish" in 1901 amounted to 620,189, or 13·9 per cent. In 1891 they were 642,053, or 13·6 per cent.

Navy and Military serving in Ireland.—The number of the Navy and Military serving in Ireland in 1891 was 25,725, and in 1901 it was 21,235.

Foreigners.—The number of foreigners in Ireland in 1901 was 16,541; in 1891, 12,900, showing an increase of 3,641.

Pauperism.—The number of paupers in the workhouses of Ireland on Census night in 1901 was 43,043, being 695, or 1·6 per cent. over the number in 1891. The number of persons in receipt of outdoor relief in Ireland at the date of the Census of 1901 was 58,365. The corresponding number in 1891 was 62,988.

CODEIN AND GLYCOSURIA.

C. A. HERTER, M.D. (*Medical News*, New York, October 25), in the course of an article on "the newly recognised sugar-controlling function of the suprarenal glands," asks—Does codein repress human glycosuria by acting upon the suprarenal gland or its internal secretion? Answering his own question as follows:—"The well-known fact that codeine diminishes the excretion of some diabetic patients, at least temporarily, suggested an inquiry as to its method of action and led to some observations of considerable interest. It was found that when an aqueous solution of codeine is mixed with a solution of adrenalin in suitable proportions the addition of a drop of a ferric chloride solution does not cause the appearance of the transitory emerald-green reaction (Vulpian's reaction), but gives a characteristic maroon coloration which is very striking. I take this to indicate that codeine enters into chemical union with adrenalin which alters the chemical properties and probably the physiological action of the latter. It is a noteworthy thing that pyrocatechin, a trihydroxyphenol which has been regarded by some investigators as the active principle of the blood-pressure-raising constituent of the suprarenal gland, yields a similar reaction when treated with codeine."

ROYAL ACADEMY OF MEDICINE IN IRELAND,

President—LOMBE ATTHILL, M.D., F.R.C.P.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF SURGERY.

President—L. H. ORMSBY, P.R.C.S.I.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, November 14, 1902.

Laminectomy for Paraplegia due to Spinal Caries.

SIR THOMAS MYLES gave details of two cases, of which one case was successful, and the other experienced no benefit. He discussed the opinions of Sir Victor Horsley and other surgeons, and expressed the opinion that early operation was to be recommended.

MR. DOYLE said that he performed laminectomy on a case in 1892. He found pachymeningitis and an abscess in front of the cord. Cystitis was also present. The patient had had paraplegia, there was improvement for two or three days after the operation, but subsequently the case did not do well. Most cases would get well if treated by rest and extension.

MR. SWAN said one danger from the operation might be a rapid dissemination of the tuberculosis. Cystitis was one of the indications for laminectomy. Some years ago he operated on a case of spinal caries in a boy, in which there was paraplegia and great cystitis; the patient got relief from the bladder symptoms, but none from the paraplegia. The lumbar region was a bad place for the operation. In most cases paraplegia was caused by disease above the sixth dorsal vertebra. Laminectomy should not be done as a matter of routine—he dissented quite from the opinion that it should. Recovery would come with rest and time extending over, say, a period of two years. With regard to the operation, he thought the best plan was when the muscles were scraped away first to trephine the bases of the lower spinous processes, and thus get access to the interior of the canal. An objection he had to laminectomy was that the patient was so helpless, could not sit up, or use his limbs, and the extensive removal of muscles, &c., was a disability not recovered from.

SIR THOMAS MYLES, in reply, said he had operated on only two cases, and they were practically experimental. There was a great

deal to be said for and against the operation. It was a very serious operation, and a case showing signs of active caries, &c., would not be suitable for operation, but a case with only the paralysis should have the benefit of it. The treatment would be long and too expensive for hospital. The choice of instruments lay between the chisel and mallet, the trephine, or a Giglio saw. The chisel and mallet should be avoided on account of the concussion, &c., and he thought that a Giglio saw could be easily passed with a bent probe, and it might not be necessary to detach the muscles, but merely to turn them back as a kind of flap.

Radical Cure of Hernia in Young Children.

MR. DENIS KENNEDY, Surgeon to the Children's Hospital, Temple-street, Dublin, condemned the use of trusses, because they were frequently ineffectual in keeping up a hernia, and because the wearing of them was always associated with a great deal of trouble to the child. He demonstrated the safety with which the operation for radical cure can be carried out, by quoting sixty cases which he had done himself in children under five years old many of them being under twelve months. In his operations he had three cases of strangulated hernia, all of which recovered. In two cases he met the vermiform appendix in the inguinal canal; in both he resected the appendix, as, on account of their size, he considered they could not with safety be returned to the abdominal cavity. He never had a death resulting from his operation.

SIR THOMAS MYLES thought the operation was a comparatively simple one. The points to be borne in mind were—the necessity for rapidity, arrest of all hæmorrhage, and great care in the administration of the anæsthetic. It was not necessary to carry out any elaborate treatment. Treatment by truss might be successful, but it was merely mechanical, and took years to effect what the operator did in so many days. He did not think that congenital hernia was a common disease.

MR. MCARDLE said he had operated at all ages from three months to eighty-four years, and he did not see why, in the absence of constitutional disease, the cases should not have the benefit of the radical cure. One complication of the operation he had met with was interference with micturition, and in these cases torsion of the sac had been carried out. In congenital hernias he found no difficulty in separating the cord from the sac if he passed his finger as far as the internal abdominal ring, where the elements of the cord can be felt. Another point was, in the case of a hernia with

no posterior sac, such as the cæcum, where you have to push back the cæcum and ligature the portion of the peritoneum which is left behind. With regard to operations on children it was even more essential to split up the anterior wall of the inguinal canal than in the case of adults. All talk about dealing with the sac had no bearing on hernia. In repairing the stratum of the abdominal wall the external oblique had to be brought down to Poupart's ligament, but care must be taken not to displace the cord. In all radical operations we try to imitate Nature, which intended that the cord should lie over the pubis and not pass through a muscular opening. We expose the elements of the cord to intermittent pressure, which should not occur.

MR. E. H. TAYLOR said that first, as to the question of the bladder, he would like to know if it had come into view in exposing the neck of the sac. He had frequently, in drawing the peritoneum upwards, seen the bladder appearing at the internal abdominal ring. He said he was with those who spoke against twisting the sac, and was of opinion that this procedure should never be employed. He had never had the least difficulty in the treatment of the sac of congenital hernia. He opened up the sac and then the testicle is seen, and he caught each end of it with a pair of clip forceps and put on another pair between, and this enabled him to cut with the scissors along a straight line. There were two different conditions in which the cord was found—one in which the cord lies behind the serous membrane, and one in which the cord is suspended by a fold of serous membrane in which it is floating. If you catch the sac in the middle you can form a serous ridge, and can peel the cord up to the internal abdominal ring. He said it was quite unnecessary to divide the aponeurosis of the external oblique. If you operate early enough you get the inguinal canal in a growing condition, and it accommodates itself to its new position.

MR. TOBIN said he differed with Mr. Kennedy on one point, and that was that treatment by truss was, as a rule, unsuccessful. If trusses are continuously applied and worn for one or two years, a radical cure is the rule. It was certainly a very tedious process and hard to carry out ; but the fact that radical cure is effected by obliterating the sac showed that simple pressure was sufficient. Such treatment is out of reach of poor people, but those who are well-to-do like it, and it avoids the operation. As to the proper treatment for ordinary hernia, he thought that cure by operation was the proper method.

MR. DOYLE said he believed that only exceptional cases in children should be operated on. He thought a truss should always be worn for some time after the operation.

DR. MORE O'FARRELL said in one case of a child of five months radical cure was performed on one side, and two days afterwards on the other side, circumcision being performed in the meantime, and the child recovered.

DR. HAUGHTON said that radical cure was the right cure, and it was very little more dangerous than wearing a truss. The youngest case he had operated on was a child of three weeks. It was a seven months' child, greatly emaciated and very feeble.

MR. LENTAIGNE said he agreed with Mr. Kennedy that for most hospital patients operation was the best treatment. It was impossible for the mothers in these cases to give the care and attention that the treatment by truss required. Even in the case of wealthy people operations should be allowed much more often than was the case. No complicated operation was necessary. A very simple procedure was sufficient. So long ago as 1884 he operated on an infant, aged eleven months, for strangulated hernia. In that case the collapsed state of the patient was such that he had barely time to put in one or two sutures, yet he had recently seen that patient perfectly cured of the hernia by that apparently insufficient operation. He had found considerable difficulty in separating the cord from the sac in congenital cases, and he would be glad to try Mr. Taylor's plan next time he met with this difficulty. He had operated on many young children since 1884, and had never had a death, although the first case, already mentioned, had been extremely near to death.

MR. KENNEDY, in reply, said that in congenital hernia he had found it impossible to separate the cord from the sac. The elements of the cord formed part and parcel of the sac.

SECTION OF MEDICINE.

President—A. V. MACAN, M.B. ; President, Royal College of Physicians of Ireland.

Sectional Secretary—R. TRAVERS SMITH, M.D.

Friday, November 21, 1902.

Erythema Marginatum Perstans.

DR. FINNY read the notes of a remarkable case of this rare affection in a lad, aged twenty-one, who had been under his care

in Sir Patrick Dun's Hospital for the last five weeks. The case presented two prominent features—(1) of having lasted off and on for over three years, and (2) of the curious marginate lines the disease assumed. Hence he described it as *Erythema Marginatum Perstans*. The eruption, for which no cause could be assigned, occurred suddenly, with a sensation of malaise, and came out first on the thighs, knees, and trunk. It has of late spread more on the arms to the wrists, and on the legs to the dorsum of the feet. It has spared the face, scalp, and upper part of the neck. When appearing it is itching and tingling somewhat like a hive, but the itching is slight as a rule. The eruption presents the polymorphism found in *erythema multiforme*—papules, circles, segments, gyrated patches, and long lines, *erythema marginatum*. The lines are chiefly found on the thighs and near the axilla, on the thorax and upper arm, and present curious devices. The eruption is pinkish-red, red, or reddish-brown. Its mode of growth can be readily studied. Commencing as a papule the size of a small pea, smooth, non-vesicular, it rapidly spreads peripherally, and in three to four days forms a circle, the centre being of the normal skin hue, while the encircling raised margin widens out. Should it meet another similar circle, the meeting arcs break down and a gyrate irregular body is the result. Again, one side of the circle may disappear, and the remaining coloured rim may end in long, wavy, or hooked lines, the terminals being as sharply raised above the skin as the rest of the line. In a very few instances a little vesiculation was detected, due to rubbing or scratching. There were no examples found of “*erythema iris*” or “*erythema nodosum*.” The diagnosis lay between *erythema multiforme* and *eczema*, *dermatitis herpetiformis*, *urticaria*, and the gyrate forms of *psoriasis*. The distinguishing features were discussed, and reference was then made to the rarity of the disease, as judged by the reticence of, or slight passing mention made in, the standard works on diseases of the skin (including Stelwagon's volume, 1902) on this particular variety. With the exception of three instances, which showed a very limited distribution of *erythema gyratum* of a lasting duration, there were no references to or exhibits of it in the volumes of *American Journal of Skin Diseases*, or in the records of the Dermatological Society of Great Britain and Ireland. There was one unusual symptom present—namely, enlargement of the glands in the groin and axilla. No special treatment seemed to do good, though the great improvement which has followed a course of thyroid extract may justify its use as a therapeutic agent of some value.

DR. WALTER SMITH said he had never seen a parallel case, but showed an illustration, published by Dr. Fox in the International Library of Rare Skin Diseases, which was almost a reproduction of Dr. Finny's illustration. His own inclination was to refer the case to erythema multiforme, but the boundaries of the erythema group were very badly defined. Accounts published by experts of diseases classed under erythema multiforme led to great confusion. There were two features to be noted in the case—(1) the serpentine, gyrate outline; and (2) its persistency and rebelliousness to treatment. He referred to a case which he had had in the Adelaide Hospital, in which the gyrate outline was very well shown; several of the rings of erythema were tipped with vesicles and conjoined with vesication. No one hesitated to class it as erythema multiforme. Referring to its persistency, Dr. Smith quoted a pair of cases of the affection which had occurred in a brother and sister, in which the eruption persisted for a considerable time; the cases were evidently similar, the eruption beginning with papules, then going on to patches, circular, annular, and gyrate.

DR. WALLACE BEATTY said he had never met a case like Dr. Finny's, and referred to the figured eruption which is seen in cases of psoriasis, a figuration which resembled that seen in the case they were discussing.

DR. DOYLE described a somewhat similar case.

DR. FINNY, in the course of his reply, said he was inclined to try large doses of quinine.

Paroxysmal Tachycardia associated with Epilepsy.

DR. R. TRAVERS SMITH reported the following case:—A girl, aged fourteen, suffered for a year past from "attacks of beating of the heart." They occurred every second or third day. They came on without cause or warning, lasted any time, from five minutes to four hours, then suddenly disappeared. During these her memory became defective, and occasionally unconsciousness resulted. Uncountably rapid pulse was noted by her step-mother, a trained hospital nurse, during these "heart attacks." In addition the patient suffered from minor epilepsy without heart hurry. During her stay in the Whitworth Hospital she had two major epileptic fits, and several paroxysms of tachycardia with heart-beat at the rate of 260 per minute. Bromide of potassium was given in increasing doses with great benefit, the epilepsy not having shown itself in the seven weeks the patient was under observation subsequently. The paroxysms of tachycardia became

less frequent and less severe, lasting only five minutes. The patient had a hereditary predisposition to epilepsy; three of her mother's first cousins, each of separate parentage, suffered from epilepsy. Dr. Travers Smith suggested that some cases of paroxysmal tachycardia might be fundamentally similar in their pathology to epilepsy, and analysed the close association between the two conditions in his patient.

DR. FINNY thought with Dr. Smith that the tachycardia and the epilepsy were allied in this case.

A Case of Lymphadenoma with Recurrent Pyrexia.

DRS. BEWLEY and J. A. SCOTT described a case of this disease. [The paper will be found at page 1.]

SECTION OF OBSTETRICS.

President—W. J. SMYLY, M.D.

Sectional Secretary—JOHN H. GLENN, M.D.

Friday, November 23, 1902.

Exhibition of Specimens.

DR. HASTINGS TWEEDY showed the following specimens:—
(a) Tubal Pregnancy; (b) Ovarian Cyst and Pyosalpinx; (c) Salpingitis (two cases).

Notes on a Case of Amenorrhœa.

DR. JOHN KNOTT read a paper so entitled. [It will appear in the number of this Journal for February.]

DR. ELIZABETH BEATTY described two cases of amenorrhœa which she had attended. One case was a very obstinate one, and had persisted for five years. Various remedies were tried, and finally treatment by electricity proved successful.

Puerperal Eclampsia.

DRS. NEILL and MCWEENEY reported the following case:—Catherine R., aged twenty-eight, admitted on April 29th, 1902. Second pregnancy—first was natural, fifteen months ago. Patient was attended in the external department of the Coombe Hospital on April 20th by the Clinical Clerk about 10 p.m., who found her in a comatose condition, having had a severe fit. He administered $\frac{1}{2}$ gr. morphin hypodermically, and had her removed to hospital without delay. On admission she was in a condition of deep coma, the contraction of the pupils, however, not being very

pronounced; the skin was dry, and the temperature subnormal—in the axilla—the pulse being 63; she was not in labour. She was at once put into a wet pack and given croton oil m j. The catheter was passed, and about 7 ozs. of bloody urine were drawn off. An enema of soap and water was given, which was retained. She was kept constantly on her side, and after two hours was taken out of the pack. She remained quiet until 3 a.m. of the following morning, when she had a severe fit, which lasted about 15 minutes. She was again put into the pack, and given $\frac{1}{2}$ gr. of morphin hypodermically. At 3 50 a.m. she had another fit, which did not last so long. She was then taken out of the pack, and at 4 15 had another fit; at 5 45 she was given a glycerine enema, which was also retained. At 6 30 she was again put into the pack and given m j. of croton oil. She remained perfectly quiet until 8 30, when the respirations were observed to be rather slow, the pupils also being dilated, the pulse remaining fairly good. She died rather suddenly and undelivered about 8 40 a.m., having remained unconscious from the time of her admission. The foetal heart could not be heard. Percentage of urea in the urine was 0.8.

DR. ALFRED SMITH said, in regard to the ætiology of this disease, that the kidney was most frequently blamed for it, but he was very doubtful if this was always correct. The kidney in Dr. Neill's case was apparently normal, except for the congestion, which is frequent in cases of toxæmia. He thought that incompetence of the liver was probably to blame.

DR. KIDD thought that a good deal might be said as to the liver being the cause, but we should wait a long time if we referred all cases of eclampsia to any one organ. He said that there must have been tremendous pressure on the ureters, but he did not know if that had any bearing on the attack.

DR. NEVILLE said that the treatment seemed to him to be the point of interest. The strain on the right side of the heart must have been very great, and having seen a case of status epilepticus treated by bleeding from the forearm, which immediately gave very remarkable relief, he thought if it had been adopted in this case the patient might have survived the attack.

DR. HASTINGS TWEEDY, speaking of the toxæmic theory, said that Bouchard was the originator of it, and had entirely proved his case from his own point of view, but Bouchard's theory had been refuted, and now we were much less certain of the toxæmic theory. The great mistake Bouchard made was that he drew off the urine without any aseptic precautions; it is now found

that every urine is toxæmic if left for any length of time exposed to the air. When drawn off with proper aseptic precautions eclamptic urine shows no toxin, and has no worse effect on rabbits, &c., than urine in normal health. The body naturally secreted poisons which had to be eliminated through the kidneys, but sometimes these organs appeared to be sluggish, and did not secrete as much as they should, and the result was seen in headaches, dyspepsia, &c., which were especially common in women. These symptoms were cured by drinking warm water, and he thought that women should drink more fluid; the want of it was shown by headaches, then twitching, and finally eclampsia. In pregnancy a woman had to eliminate not only her own poisons, but also those of the foetus, and this double dose, combined with the fact that her nervous system was then more excitable, made her a good subject for eclampsia. He referred to the difficulty which Dr. Neill had in getting the bowels of his patient to move with croton oil, and said that one drop was nothing; up to six or seven could be given. He thought that in some cases the poison was not in the blood, but deposited in the solid tissues, and therefore bleeding was of use, because it drew it into the blood stream. He doubted if pressure on the ureters could be the cause of eclampsia.

DR. NEILL, in replying, said that in these cases the kidneys were not always diseased, but that often they were. He then referred to a patient who was admitted to hospital suffering from albuminuric retinitis. She got well. She was 7 months pregnant and developed eclampsia. Though she recovered from this, she became totally blind. She had five bad fits, then they ceased, and three weeks afterwards a macerated foetus was expelled. There was a large quantity of albumin in the urine. In that case undoubtedly the kidneys were diseased. Other cases, he said, had shown large quantities of albumin, but it quickly disappeared. He never performed venesection; the patients were simply kept as quiet as possible. In nearly all the cases of eclampsia he had seen there had been very little post-partum hæmorrhage. He had seen a peculiar case in which death resulted apparently from eclampsia—the convulsions came on after the child was born. In this case there was very advanced tuberculous disease of the lungs. He said that 2 minims of croton oil were given, and at the *post-mortem* nothing was found in the bowels. The stomach was greatly distended with gas; the small intestine was empty. There was nothing abnormal in the abdominal cavity except the ureter, which was quite unrecognisable from its enormous distension.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by **SIR JOHN MOORE, B.A., M.D.** Univ. Dubl. ;
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VITAL STATISTICS.

For four weeks ending Saturday, November 29, 1902.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending November 29, 1902, in the Dublin Registration Area and the twenty-one principal provincial urban districts of Ireland was 24·2 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,401. The deaths registered in each of the four weeks ended Saturday, November 29, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Nov. 8	Nov. 15	Nov. 22	Nov. 29			Nov. 8	Nov. 15	Nov. 22	Nov. 29	
22 Town Districts	23·8	22·8	22·8	24·2	23·4	Lisburn	18·6	18·6	4·5	13·6	11·3
Armagh	27·5	27·5	41·2	27·5	30·9	Londonderry	17·9	17·9	23·0	15·4	18·6
Ballymena	4·8	4·8	4·8	14·4	7·2	Lurgan	31·0	22·1	18·3	31·0	24·3
Belfast	19·8	23·0	20·8	21·1	21·2	Newry	16·8	12·6	16·8	12·6	14·7
Clonmel	25·6	35·9	25·6	15·4	25·6	Newtownards	57·2	11·4	17·2	51·5	34·3
Cork	21·2	17·1	15·1	15·1	17·1	Portadown	15·5	0·0	10·3	15·5	10·3
Drogheda	8·2	20·4	28·6	36·8	28·5	Queenstown	26·4	6·6	18·2	13·2	14·9
Dublin (Reg. Area)	30·3	26·7	31·1	30·6	29·7	Sligo	43·2	14·4	0·0	9·6	16·8
Dundalk	31·9	23·9	16·0	23·9	28·9	Tralee	21·1	21·1	26·4	21·1	22·4
Galway	23·3	3·9	11·7	15·5	18·6	Waterford	17·5	27·8	8·9	37·0	21·4
Kilkenny	19·7	29·5	9·8	0·0	14·8	Wexford	23·3	32·7	23·3	32·7	28·0
Limerick	13·7	20·5	19·1	26·0	19·8						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, November 29, were equal to an annual rate of 3·8 per 1,000, the rates varying from 0·0 in fifteen of the districts to 20·6 in Armagh—the 4 deaths from all causes registered in that district including 2 from measles and one from diarrhoea. Among the 145 deaths from all causes in Belfast are 14 from measles, 4 from whooping-cough, one from diphtheria, 6 from enteric fever, and 5 from diarrhoea. The 19 deaths in Limerick include 9 from measles.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this Area is 378,761; that of the City being 293,394, Rathmines 33,208, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,380.

In the Dublin Registration Area the births registered during the week ended Saturday, November 29, amounted to 158—86 boys and 72 girls; and the deaths to 230—119 males and 111 females.

DEATHS.

The registered deaths represent an annual rate of mortality of 31·7 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the Area, the rate was 30·6 per 1,000. During the forty-eight weeks ending with Saturday, November 29, the death-rate averaged 24·8, and was 1·5 below the mean rate for the corresponding portions of the ten years 1892–1901.

There were 14 deaths from measles—in the preceding 4 weeks the deaths registered were respectively 16, 16, 10, and 19. Deaths from scarlet fever rose from 5 in the preceding week to 8 in the week under review. Influenza caused 3 deaths, diphtheria 4 deaths, and enteric fever 4 deaths. There were 2 deaths from epidemic diarrhoea and 5 deaths from *diarrhœa*.

Of 34 deaths from tuberculous diseases, tuberculous phthisis and *phthisis* caused 22 deaths, tuberculous meningitis 3 deaths, tuberculous peritonitis one death, and 8 deaths were due to other forms of the disease.

Three deaths were registered from carcinoma, and 6 deaths as due to *malignant disease* ("cancer").

There were 17 deaths from diseases of the nervous system, including 10 deaths of children under 5 years of age from *convulsions*.

Diseases of the heart and blood-vessels caused 22 deaths.

Diseases of the respiratory organs caused 53 deaths—a number which is equal to an annual rate of 7·3 per 1,000 of the population of the Dublin Registration Area. The annual rate for the corresponding period of the past 10 years was 6·2 per 1,000. In the above total, 36 deaths from bronchitis, 9 deaths from broncho-pneumonia, and 5 deaths from *pneumonia*, are included.

There was one death from accidental drowning and one death by suicide.

In 13 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 9 children under 5 years of age (including 6 infants under one year old) and the death of one female aged 78 years.

Ninety-five of the persons whose deaths were registered were under 5 years of age (49 being infants under one year, of whom 12 were under one month old), and 46 were aged 60 years and upwards, including 20 persons aged 70 and upwards, of whom 5 were octogenarians.

The Registrar-General points out that the names of causes of death printed above in *italics* should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN DUBLIN.

(1.) CASES OF INFECTIOUS DISEASES NOTIFIED TO THE PUBLIC HEALTH COMMITTEE OF THE CORPORATION.

Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of infectious diseases in the City of Dublin notified under "The Infectious Diseases (Notification) Act, 1899," as follows:—

Week ending November	8, 1902,	..	..	267 cases.
"	"	15,	"	.. 247 cases.
"	"	22,	"	.. 170 cases.
"	"	29,	"	.. 236 cases.

Of the 236 cases notified in the week ended November 29, 22 were erysipelas, 26 enteric fever, 31 scarlatina, 14 diphtheria, 135

measles, 3 "continued fever," one puerperal fever, 3 rubella, and one varicella.

(2.) CASES OF INFECTIOUS DISEASES IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending November	8, 1902,	..	..	8 cases.
"	" 15,	"	..	13 cases.
"	" 22,	"	..	4 cases.
"	" 29,	"	..	4 cases.

Of the 4 cases notified in the last week, 3 were measles, and one was scarlet fever.

(3.) CASES OF INFECTIOUS DISEASES IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending November	8, 1902,	..	..	10 cases.
"	" 15,	"	..	16 cases.
"	" 22,	"	..	9 cases.
"	" 29,	"	..	5 cases.

Of the 5 cases notified in the last week, one was erysipelas, 2 were measles, and 2 were whooping-cough.

(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ending Saturday, November 29, forty-seven cases of measles were admitted to hospital, being 23 above the admissions in the preceding week: 32 patients were discharged, there were 6 deaths, and 99 cases remained under treatment at the close of the week.

Fourteen cases of enteric fever were admitted to hospital, 19 cases were discharged, there were 3 deaths, and 84 cases remained under treatment at the close of the week.

Thirty-two cases of scarlatina were admitted to hospital, 22 cases were discharged, there were 7 deaths, and 177 cases remained under treatment at the close of the week. This number is exclusive

of 24 convalescents from scarlatina who remained under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

One case of typhus was admitted to hospital, 3 cases were discharged, and 2 remained under treatment at the close of the week.

Eighteen case of diphtheria were admitted to hospital, 12 were discharged, there were 3 deaths, and 54 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 3 cases of pneumonia were admitted to hospital, 2 patients were discharged, and 5 cases remained under treatment at the end of the week.

STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending November	8, 1902,	..	..	80 cases.
"	"	15,	" ..	63 cases.
"	"	22,	" ..	69 cases.
"	"	29,	" ..	59 cases.

Of the 59 cases notified in the week ended November 29, 20 were enteric fever, 13 erysipelas, 7 diphtheria, 10 "continued fever," 7 scarlet fever, and 2 were puerperal fever.

ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, November 29, in 76 large English towns, including London (in which the rate was 19·4), was equal to an average annual death-rate of 19·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·0 per 1,000, the rate for Glasgow being 19·6 and for Edinburgh 21·9.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of November, 1902.

Mean Height of Barometer, - - -	29·746 inches.
Maximal Height of Barometer (2nd, at 9 a.m.), -	30·287 „
Minimal Height of Barometer (8th, at 3 p.m.), -	29·060 „
Mean Dry-bulb Temperature, - - -	46·8°.
Mean Wet-bulb Temperature, - - -	44·8°.
Mean Dew-point Temperature, - - -	42·5°.
Mean Elastic Force (Tension of Aqueous Vapour),	·276 inch.
Mean Humidity, - - -	85·9 per cent.
Highest Temperature in Shade (on 1st), -	58·9°.
Lowest Temperature in Shade (on 27th), -	35·2°.
Lowest Temperature on Grass (Radiation) (20th),	30·0°.
Mean Amount of Cloud, - - -	63·3 per cent.
Rainfall (on 18 days), - - -	3·331 inches.
Greatest Daily Rainfall (on 6th), - - -	·880 inch.
General Directions of Wind, - - -	S.E., W.

Remarks.

November proved a fitting sequel to the dreary wet months of 1902 which preceded it. There was, indeed, a remarkable anti-cyclonic period—rainless, cold, and squally—from the 14th to the 21st inclusive; but, for the rest, rain fell almost daily and often heavily. The anticyclone alluded to was of great intensity and staying power. It was central over the southern half of Scandinavia, in which region the barometer rose to nearly 31 inches on the night of the 17th (Stockholm reported 30·96 inches; Wisby, 30·97 inches). Connected with this high pressure system a bitter easterly wind swept across Central Europe, accompanied by severe frost and snowstorms. In the British Isles the wind drew into S.E., and on the West Coast of Norway into S.W. On the morning of the 19th, the distribution of temperature was very curious. Berlin reported 14° F., while Bodö, on the Norwegian Coast, latitude 67° (that is, within the Arctic Circle), reported 44°, or 30° higher. In Dublin no frost occurred in the screen, but Birr had a temperature of 26° on the morning of the 20th, and even at Valentia the thermometer fell to 30° on the morning of the 30th. The duration of bright sunshine was estimated at 67·25 hours, or a daily average of 2·24 hours.

In Dublin the arithmetical mean temperature (47·5°) was

considerably above the average (45.4°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 46.8° . In the thirty-seven years ending with 1901, November was coldest in 1878 (M. T. = 38.2°), and in 1870 (M. T. = 42.2°); warmest in 1899 (M. T. = 50.7°), and in 1881 (M. T. = 50.3°).

The mean height of the barometer was 29.746 inches, or 0.114 inch below the corrected average value for November—namely, 29.860 inches. The mercury rose to 30.287 inches at 9 a.m. of the 2nd, and fell to 29.060 inches about 3 p.m. of the 8th. The observed range of atmospheric pressure was, therefore, 1.227 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 46.8° , or 3.8° below the value for October, 1902. The arithmetical mean of the maximal and minimal readings was 47.5° , compared with a thirty years' (1871–1900) average of 45.4° . On the 1st the thermometer in the screen rose to 58.9° —wind, W.N.W.; on the 27th the temperature fell to 35.2° —wind, S.E. The minimum on the grass was 30.0° on the 20th.

The rainfall was 3.331 inches, on 18 days—the rainfall was considerably, while the rainy days were slightly, above the average. The average rainfall for November in the thirty-five years, 1866–1900, inclusive, was 2.560 inches, and the average number of rainy days was 17.0. In 1888, 6.459 inches fell on 26 days. On the other hand, the rainfall in 1896 was only .664 inch on 9 days. In 1899, 1.964 inches fell on 13 days, and in 1900, 4.873 inches on 19 days. In 1901 the rainfall was 3.620 inches on 11 days.

High winds were noted on 20 days, and attained the force of a gale on three days—the 8th, 11th, and 21st. The atmosphere was more or less foggy in Dublin on the 2nd, 3rd, 14th, 25th, 27th and 29th. A lunar halo was seen on the 9th. Lightning was seen on the 9th. Sleet and hail fell on the 20th—hail only on the 29th.

The rainfall in Dublin during the eleven months ending November 30th amounted to 27.812 inches on 190 days, compared with 15.378 inches on 141 days during the same period in 1887, 24.450 inches on 162 days in 1899, 32.736 inches on 196 days in 1900, 24.086 inches on 156 days in 1901, and a thirty-five years' average of 25.380 inches on 180 days.

At Cloneevin, Killiney, Co. Dublin, 4.03 inches of rain fell on 19 days, compared with a seventeen years' (1885–1901) average of 3.086 inches on 16.2 days. The maximal fall in 24 hours was

·66 inch on the 11th. Since January 1, 1902, 30·18 inches of rain have fallen at this station on 178 days. The corresponding figures for 1897 were 28·64 inches on 184 days; for 1898, 26·77 inches on 173 days; for 1899, 27·98 inches on 162 days; for 1900, 33·47 inches on 188 days; and for 1901, 26·10 inches on 161 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 5·290 inches on 17 days. Of the total quantity ·810 inch fell on the 11th, and ·700 inch on the 7th. From January 1st, 1902, up to November 30th, rain fell at Greystones on 157 days to the amount of 37·101 inches. The corresponding figures for 1897 were 38·185 inches on 188 days; for 1898, 28·786 inches on 156 days; for 1899, 32·870 inches on 162 days; for 1900, 30·926 inches on 173 days; and for 1901, 31·425 inches on 147 days.

Dr. B. H. Steede reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 5·551 inches on 18 days, compared with 3·189 inches on 12 days in 1899, 5·724 inches on 18 days in 1900, and 3·196 inches on 13 days in 1901. The maximal falls in 24 hours were ·750 inch on the 11th, and ·642 inch on the 7th. Since January 1, 1902, the rainfall at Newcastle amounted to 35·293 inches on 172 days. The corresponding figures for 1898 were 31·197 inches on 157 days; for 1899, 30·832 inches on 152 days; for 1900, 34·323 inches on 168 days; and for 1901, 28·149 inches on 155 days. On the 1st the screened thermometers at the National Hospital rose to 58·0°, on the 20th they fell to 30·8°.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 17 days to the amount of 4·61 inches, the greatest measurement in 24 hours being ·97 inch on the 6th. In November, 1901, the rainfall was 3·53 inches on 8 days. The mean temperature in the shade was 46·6°, the range being from 57° on the 1st to 35° on the 20th, 27th, and 29th.

In the City of Cork, rain fell on 21 days to the very large amount of 8·52 inches, or 4·57 inches above the average rainfall for November. There were three days in the month on which the measurement exceeded one inch—namely, the 6th, with 1·10 inches; the 10th, with 1·06 inches; and the 23rd, with 1·02 inches. The rainfall exceeded that of any November during the previous 37 years, and was more than double the average. The nearest approach to such a measurement was 7·87 inches in November, 1892.

At the Ordnance Survey Office, Phoenix Park, Dublin, the

rainfall was 2.553 inches on 17 days, compared with 4.075 inches on 13 days in November, 1901. The heaviest rainfall in 24 hours was .915 inch on the 6th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, Co. Dublin, reports that the mean temperature of November at that health resort was 47.7°, being 0.1° below the average for November during the previous 4 years. The extremes were—highest, 61° on the 2nd; lowest, 34.5° on the 29th. At Bournemouth the mean was 46.8°, being 0.1° above the average for November during the previous 4 years; the extremes were—highest, 58° on the 2nd and 7th; lowest, 30° on the 18th and 19th. The mean daily range of temperature at Kingstown was 8.5°; at Bournemouth it was 9.7°. The mean temperature of the sea at Sandycove Bathing Place was 51.8°, or 1.3° above the average for November during the previous 4 years. The average sea temperature for the past 3 months of Sept., Oct., and Nov. at Kingstown has been as much as 2.8° above the average for these months during the previous 4 years. These facts may be interesting in connection with the low temperatures recorded elsewhere from the 18th to the 21st of the month. The mean humidity of the air was 73 per cent. The rainfall amounted to 3.61 inches on 17 days; at Bournemouth it was 2.41 inches on 15 days. The duration of bright sunshine was 38.9 hours, whereas at the Ordnance Survey Office, Phoenix Park, it was 54.9 hours, or 15.1 hours below the average for the month at that station during the previous 11 years. It was 39.8 hours at Valentia, 69.9 at Parsonstown, 45.7 at Southport, and 49.6 at Eastbourne.

HYDROPHOBIA FROM A WEASEL'S BITE.

ACCORDING to the *Medical News* (New York), a milk dealer in Paterson, New Jersey, was annoyed by a weasel which had taken possession of his barn. On August 21, 1902, during his attempts to capture the little animal he was severely bitten. About September 1st he developed symptoms of hydrophobia, from which he died on September 4th.

PERISCOPE

NOTE ON A CURIOUS EPITAPH. BY SIR CHARLES A. CAMERON, C.B., M.D.

THE following curious Epitaph is said to have been written in the "Merchant's Coffee-House," in Essex-street, Dublin, about the year 1753, by Boyle Godfrey, a well-known chemist in those days, a short time before his death :—

EPITAPHIUM CHYMICUM.

"Here lieth to *digest*, *macerate*, and *amalgamate* with Clay,
In *Balneo Arenæ*,

Stratum super Stratum,

The Residuum, Terra Damnata et Caput Mortuum

OF BOYLE GODFREY, CHYMIST,

and M.D.

A Man, who, in this earthly *Laboratory*,

Pursued various Processes to obtain

Arcanum Vitæ,

Or, the Secret to live ;

Also, *Aurum Vitæ*,

Or, the Art of getting, rather than making, Gold,

Alchymist-like,

All his Labour and *Projection*,

As *Mercury* in the Fire, *evaporated* in *Fume*.

When he *dissolved* to his first Principles,

He *departed* as poor

As the last Drops of an Alembic ;

For Riches are not poured

On the *Adepts* of this World.

Though fond of News, he carefully avoided

The *Fermentation*, *Everescence*

And Decripitation of this Life.

Full seventy Years his exalted *Essence*

Was *hermetically* sealed in its *Terene Matrass*,

But the Radical Moisture being *exhausted*,

The *Elixer Vitæ* spent

And *exsiccated* to a *Cuticle* ;

He could not *suspend* longer in his *Vehicle*,

But *precipitated* *Gradatim*,

Per Carpanam,

To his original Dust.

May that Light, brighter than *Bolognian Phosphorus*,
 preserve him from the *Athanor*, *Empyreuma*, and
reverberatory Furnace of the other World ;
 Depurate him from the *Fæces* and *Scoria* of this,
 Highly rectify and *volatilize*
 His ætherial Spirit,
 Bring it over the *Helm* of the *Retort* of this Globe,
 Place it in a proper *Recipient*
 Or *Chrystalline Orb*,
 Among the Elect of the *Flowers of Benjamin* ;
 Never to be *saturated*
 'Till the general *Resuscitation*,
Deflagration, *Calcination*,
 And *Sublimation* of all Things."

X-RAY TREATMENT—A WARNING.

A SUIT has been begun by John Bortoli against the Northwestern University and Lakeside Hospital, Chicago, for injuries alleged to have been received during the course of treatment at these institutions with the X-ray ; 12,000 dollars damages are claimed.—*The Medical News*, N. Y., December 13, 1902.

CULPABLE CAUSE OF THE SPREAD OF CONTAGION.

A CULPABLE, even criminal, cause of the spread of contagion is being investigated by the Health Department (Chicago), with a view of presenting the facts to the medical organisations of the city, and to the State Board of Health. This cause is the growing practice among certain physicians of the baser sort of giving certificates of death from contagious diseases, in which certificates some non-contagious disease is assigned as the cause. This is done usually at the request of the family, who wish to evade the restrictions of the Health Department on contagious disease funerals. In one recent case of death from diphtheria the certificate gave the cause as "broncho-pneumonia," and the sole motive of the family in procuring this perjured certificate was that the funeral might be delayed until the following Sunday, while the regulations of the Department require that burials of contagious disease bodies be made within 36 hours after death. In another recent diphtheria death the cause assigned in the certificate was "acute meningitis," and the impelling motive was that a public funeral might be held, contrary to the rules of the Department forbidding public funerals in such cases.—*The Medical News*, N. Y., December 13, 1902.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. IV.—*On Some Remote Effects of Dental Disease.* By
ROBERT H. WOODS, M.B., F.R.C.S.I.; Surgeon for Diseases
of the Throat, Nose, and Ear to the Richmond Hospital,
Dublin.

THE apathy of the public on the subject of the teeth, and its toleration of dental disease when not accompanied with pain, is largely a reflex of the attitude of our profession on this highly important subject. Our very familiarity with dental ailments has bred the inevitable contempt for them as serious conditions, and hence we have overlooked the part they play in the causation of disorders beyond their immediate neighbourhood. Their influence for evil has been further concealed by the fact that in every case a considerable interval of time elapses between the onset of the dental disease and the induction of secondary mischief. The result has been that the secondary disease was regarded as primary, and the co-existence of the primary as merely accidental.

To the eye of vulgar logic bad teeth are like shabby coats: things that had better be avoided if expense is no object, but which except for appearance do as well as the best. And it is astonishing to what an extent the question is still regarded in this purely cosmetic light, even by those whose business it is to know the right thing and practise it. Some dentists,

when consulted about carious stumps constantly ask the patient "Do they give you any trouble"?—meaning "do they cause any pain"—thus tacitly assuming, and leading the patient to think, that such teeth could have no injurious effects without the owner's knowledge. This question when put means that if the patient replies in the negative he is told to "let well alone," or "let sleeping dogs lie," and that it will be time enough to deal with them when pain comes on ; and so the patient virtually adjudicates in his own case, with as little knowledge of its bearings as the man in whom he puts his trust.

Dentistry, like surgery, had its origin in a handicraft; but its evolution into a profession is so very recent that broader views are well nigh a monopoly of those who occupy its higher walks. This is probably why so many dentists regard their cases in this very narrow way. To produce efficient and not unsightly incisors and grinders is their only object, and so long as the function of mastication is satisfactorily performed their crowns, bridges, and plates may, for all they care, cover any defect or insanitation. It is no uncommon thing to find a plate fitted over a number of septic stumps, from which the crowns have been lazily cut off, and from which pus, as it escapes, is drunk by the unfortunate proprietor to the great detriment of his health. No one need wonder if in such cases indigestion and loss of appetite with their attendant evils should supervene. In some cases no explanation is given for this gross sin against the most fundamental laws of hygiene ; in some, especially ladies, a feeble defence is made that extraction of the stumps would cause atrophy of the gum and sinking of the cheeks ; as if this could not be compensated for by a suitable plate.

Recognition that abnormal dental conditions could have remote effects is at least as old as Hilton's time, and his classical descriptions of the reflex nervous effects which dental caries may have in the ear and other places, are too good and too well known to need repetition. But it is not so with the direct infective and pyogenic effects. Among these enlargement and even tubercular disease of the submaxillary, the anterior cervical, and even the posterior cervical glands, is prominent. I have again and again observed in cases of enlarged cervical glands, reputed to be "constitutional,"

evidence that the infection must have come from the teeth ; and in these so-called constitutional cases one asks in vain why, on this assumption, the cervical glands are selected to the practical exclusion of other chains ? Before glands can be attacked by pyogenic or tubercular disease it is necessary that the specific organism should gain entrance to the system through some portal. It is difficult to see how bacteria can invade healthy skin or mucous membrane without leaving some trace of their invasion. Localised glandular infections argue a local superficial cause. Who, on discovering an inflamed Cruikshank's gland, would hesitate to suspect or even infer the existence of a sore on the ulnar aspect of the forearm or hand ? And when in cases of enlarged glands which draw their lymph from the mouth we find decaying roots and irritated gums, the inference is equally legitimate that the one condition causes the other. The responsibility of other causes, such as chronic tonsillitis and otorrhœa, for cervical glandular enlargement is, I know, great, but with these I am not now concerned.

It is a popular belief that diseases of the teeth are predisposed to be disorders of the stomach, but a good deal has been written lately to show that this is a "hysteron proteron," and that the part played by dental caries and purulent conditions of the gums in the causation of more remote disorders—*e.g.*, both simple and ulcerative gastritis, and simple and progressive anæmia—is a very active one. I can well believe it ; and though such cases do not come directly under my notice, I have seen enough improvement follow extraction to confirm me in this belief. In this connection I may mention the following case. A relative of my own, who for years suffered from gastric ulcer, got no permanent relief until by my advice she had all her unsound teeth removed, and since that time she has had no return of gastric pain. As well as her gastric symptoms, the glands of both anterior and posterior triangles of the neck on the left—the most carious side—were so enlarged as to require removal. It may be objected that the greater frequency of gastritis among females is against the theory of its causation by purulent mouth conditions. For though the teeth of females give way more easily than those of males, the difference is not great enough to account for the discrepancy. This is only a superficial objection, for we must bear in mind

our everyday experience that exposure to infection is not the same thing as being infected, and that into the question of liability the most complex factors, personal, racial, habitual, and sexual, enter. This much is clear: that whatever theory we adopt must fit the fact that with many cases of gastritis we find oral sepsis, and that the adoption of oral hygiene is followed by the cure of the patient.

It is not unusual for patients, especially girls, to complain of slight and constantly recurring sore throat, sometimes associated with subjective sensations about the neck, of a more or less indefinite character. In many of these cases nothing abnormal can be found except slight anæmia and infected teeth, and frequently removal of these conditions is enough to cure the patient. It may be said that the symptoms in such a case are the result of the anæmia; but it will, I think, be found that the severity is largely dependent on the degree to which the teeth are involved. In bad cases the distress may produce a veritable "globus hystericus;" and I have seen more than one such case cured by extraction of diseased stumps. Whether this is a reflex or a direct effect of the dental disease I am unable to say.

In the same category comes "functional" dysphagia—i.e., without obvious organic disease—many examples of which I have seen, some, I am bound to admit, in edentulous people, but most in those with extensive dental caries and pyorrhœa. Some of these cases were so bad that no solid food had been swallowed for two years. Relief will be given to such patients by passing œsophageal bougies, but its permanence can be guaranteed only by a clearance of the stumps.

Dental caries is invariably associated with, and I believe is the invariable cause of, mycosis of the tonsil, where the crypts are filled with that cheesy, foetid *débris* which causes such discomfort to the patient, and is often an offence to his neighbour. The foetor is of the same character as that from dental caries, and the same organisms, notably *leptothrix*, are found in both conditions. It is hardly necessary to show how the infection travels, for everything that leaves the mouth, even to saliva, must be infected, and capable of infecting what it touches. Many of these cases are subject to recurrent slight attacks of tonsillitis, and even true quinsy. The slightest chill or exposure suffices to cause a sore throat.

Between each attack the organisms are carefully preserved in the tonsils, and anything that tends even temporarily to reduce the resistance of the body to bacterial invasion affords them an opportunity of which they would be less than bacterial if they hesitated to avail themselves. The impossibility of cleansing these ramifying chambers points to tonsillotomy as the most certain cure. But even without operative treatment I have found the tendency to attacks enormously lessened and sometimes removed by dental hygiene.

In cases of so-called nasal catarrh, where pus is discharged from one or both noses, it is safe to say that the antrum of Highmore is the commonest source of the pus; and it is equally safe to say that the commonest cause of this condition is a carious molar. I have met with several such cases where simple extraction of the offending root so improved the patient's condition that he refused to believe in the necessity for further treatment. The way in which infection travels in these cases, without attracting the patient's notice, is very easy to follow, for the molar roots normally touch, and often project through the floor of the antrum; and a root abscess, which in another place would cause a gum-boil, has room here to expand without giving rise to tension, and hence without pain. It is almost axiomatic that unless pus is under tension there will be no pain. Now, the only cases which occur to the lay mind of pus-formation are those in which the morbid product is under tension—gum-boils, whitlows, boils, &c.—and therefore it is not surprising that one's statement of a molar being the origin of pus that finds its exit through the nose is often met with the objection, "But the tooth never ached, so how could an abscess have formed?"

If a root abscess discharges into the antrum there is little reason to expect that it will ever cure itself, though I think this now and again happens. For, quite apart from the existence of caries or necrosis in or about a stump, the cavity is infected at its lowest point, and the morbid material has no chance of being eliminated until it accumulates so as to fill the antrum, when it will escape through the natural opening into the middle meatus, but only *pari passu* with the formation of fresh material below. We thus see that the quantity of pus, however small it may be at first, is imprisoned; and it needs but short consideration to see how by its continual

contact with the hitherto healthy lining membrane a secondary infection is started, which can have no tendency to limit itself; its chronicity is established, and its decomposition a matter of great probability.

I do not suppose there is to-day a rhinologist who doubts that polypoid degeneration results, and polypi will certainly develop, from a chronic purulent discharge from any of the sinuses of the nose. Some, indeed, go so far as to say that polypi have no other origin. From my own observation it is my firm conviction that the most common cause of antral empyema is infection from molar stumps, and therefore I regard neglected molars as a very usual cause of polypi. This is of no merely theoretical importance, for radical cure of polypi, which we now regard as the patient's right, is impossible while empyema exists, and cure of the empyema involves removal of the cause. That nasal degeneration—especially that form of it resulting in polypi—generally aggravates and sometimes causes asthma, I have not the slightest doubt. I have had many cases of asthma greatly relieved, and some completely cured, by the cure of polypi. And if we admit that caries can and does cause polypi, the conclusion that it may cause asthma is unavoidable. I have also traced the formation of a rhinolith and a case of that most loathsome disease, caseous rhinitis, to the same cause. Though the connection between molar caries and nasal disease is sufficiently obvious to ordinary observation, we have very valuable confirmatory evidence from the Röntgen Rays.



Here are two skiagrams from a patient who some years ago consulted me for a bad smell in his left nose. Polypi and pus were found in the left middle meatus; the right side was healthy. On examination of the left upper molar region a beautiful golden bridge was seen covering the molar and bicuspid teeth, and transillumination showed marked dulling of the malar region. I suspected that the gilding cloaked corruption; but the patient protested that he had no trouble from the dentistry, and that he could masticate the toughest food with pleasure. In this case I was very glad to be able to fall back on skiagraphy for confirmation of my belief, for it would have been awkward if I had destroyed the healthy foundations of a valuable piece of work. I therefore got Dr. Haughton to take the skiagrams for me. On the left, the affected side, the roots of the teeth are seen to be lying free in pus cavities, the cancellous tissue being destroyed round the fangs; while on the healthy side, though some teeth are wanting, the remainder are fixed naturally in the alveolus, and the bony structure is clearly seen right into touch with the teeth. I do not think it possible for anyone to doubt that the whole process started with dental caries, and that had the stumps been extracted in time, instead of having been patched, the nasal trouble would never have started. This case is no isolated one; it is an example of a type with which I am now familiar. I have many similar skiagrams, but have selected these two because the pictures are so readable, the lesion so clear, and the difference between the diseased and the sound side in the same patient so marked.

A skiagram is not necessary in the average case, but its evidence is very valuable in enabling us to determine which of a number of filled teeth is the culpable one; and in the smaller number of cases where the infection takes place through the nose the skiagram will exonerate the teeth from blame.

A gentleman was sent to me lately whose only complaint was that he had for years had an irritating, tickling cough, which was especially prone to affect him "while listening to the pianissimo passages of tenor solos, and the pathetic parts of obituary sermons." He referred the sensation to the upper part of the trachea and larynx. The throat was fairly healthy,

the larynx entirely so, and the lungs were normal to both percussion and auscultation. There was no expectoration. This was a typical case of "nervous" cough—of cough due to a neurosis. In the nose there were polypi and pus in the middle meatus. Transillumination showed well-marked dulling of the malar region, and there was no difficulty in diagnosing empyema of the left antrum. Some of his molars were actively carious, some had been extracted. On washing out the antrum through the nose very foetid pus was evacuated, and he recognised the old familiar smell—that of decaying teeth—which had been intermittently present from the onset of his symptoms some years ago. Here the polypi were the reflex cause of the neurosis, and his complaint was so completely cured by their removal that he could not make up his mind in cold blood to have the stumps and antrum treated as they ought to be. Radical cure has in this case not been performed, and I shall look for recurrence of the symptoms with interest.

I should, therefore, recommend that more attention should be paid to milk teeth, and that caries should be stopped the moment it is known to exist. In cases where the crown of a permanent tooth is beyond repair, the stump should not be crowned, unless there is reason to think the fang is healthy, and that an aseptic job can be done. Under no circumstances should a mere stump be allowed to remain in the gum, whether concealed by a plate or not. I do not deny that stumps may be present without giving rise to any apparent or palpable mischief, but they are for neither ornament nor use, and are only an element of danger. Patients who wear plates should be instructed in the necessity for frequently cleansing and sometimes boiling them, if the materials of which they are made permit the use of heat. Again, the gums should be kept in as healthy a condition as possible, and no pains should be spared to prevent pyorrhœa alveolaris.

Finally, I am convinced that, where chronic throat disorders, nasal polypi, or any other of the numerous secondary effects are present, the necessity for dental hygiene is increased, and the removal of anything that stands in its way becomes imperative.

ART. V.—*On an Outbreak of Typhus Fever.* By SIR CHARLES A. CAMERON, C.B., M.D., M. & Hon. F.R.C.P.I., F.R.C.S.I.; Professor of Chemistry and Hygiene, R.C.S.I.; Chief Medical Officer of Health for Dublin.

ON the 16th of December, 1902, a woman, aged twenty-eight years, and her infant, a girl, aged six months, were removed to Cork-street Fever Hospital from No. 56 Church-street. Dr. Garland, District Medical Officer, had diagnosticated the cases to be typhus fever. The next day two sisters, aged fourteen and seventeen, sickened, and on the following day, the 18th of December, were removed to Cork-street Fever Hospital. They, too, had contracted typhus fever. On the 19th a woman, aged thirty-eight, her daughter, aged three, and her nephew, aged thirteen, were taken from this house to hospital, and were found to be suffering from typhus fever. These facts having been communicated to me by Dr. Garland, I had all the remaining inmates, 35, removed early on the 19th to the Corporation "Refuge," Nicholas-street. They were detained there until late on the evening of the 21st of December. Their clothes were thoroughly disinfected, and whilst the purifying process was going on the "contacts" were supplied with clothes kept in the Refuge for such a purpose. All the "contacts" got warm baths, and, when they left, the Refuge was then thoroughly disinfected.

On the 19th and 20th of December, five of the "contacts" showing indications of serious illness were sent from the Refuge to hospital, where all of them soon were typhus fever patients. They were a man, aged forty, his wife, aged thirty-nine, a daughter, seven years old, another daughter of four years, and a boy, aged nine. The two girls admitted into hospital on the 18th were daughters of this man and his wife, so that on the 20th of December, seven members of this family out of a total of ten were in hospital. Subsequently the number was increased to eight. On the return of the "contacts" to Church-street, an infant, aged fifteen months, the youngest of the family of ten, above referred to, was brought to hospital, and was found to be affected with the fever. The father and mother died on the 31st of December.

On the 1st of January, 1903, a woman, aged sixty, and on

the 2nd of January another woman, aged sixty, both residents in the same room, were removed from the house to hospital; one had typhus fever, the other, we may take it, had the same disease, but as she died soon after admission, the case was doubtful. The other woman died on the 15th of January, 1903. By the 2nd of January fifteen persons had been admitted to hospital, or more than one-third of the inmates (42) of 56 Church-street.

On the 19th of January a child affected with typhus fever was removed to hospital.

Immediately after the removal of the inmates from the infected house a large number of disinfectors, whitewashers, and charwomen were set to work on it. All the wall paper of the rooms that were provided with wall paper was removed and the walls were whitewashed. The walls of the other rooms and of the stairs and hall were similarly treated. The whole house was disinfected by means of spray of mercuric chloride of double the usual strength, having 1 part in 500 parts of water, and with formalin vapour. No fewer than 1,000 tablets of formalin were employed. A second disinfection was performed with sulphurous acid. The floors and woodwork were thoroughly washed with disinfecting soap and hot water. The sewers and w.c. were flushed with a disinfecting solution. The adjacent atmosphere was purified by sulphurous acid liberated in a gaseous form from the liquefied gas.

As it was desirable that the inmates should return to their dwellings as soon as possible, and as their number was too large to be properly accommodated at the Refuge, the disinfectors and whitewashers were kept at work the greater part of Friday and Saturday nights, as well as on Sunday. Mr. Henry Egan, Superintendent of Disinfection, was indefatigable in getting the work of purification carried out, and in the removal of the "contacts" to and from the Refuge. I spent a considerable time at the house and Refuge.

Food for the "contacts" was supplied by Mr. Nally, Assistant Secretary; and he gave compensation to some of them, who were prevented from carrying on their usual occupations. The money expended for this purpose, and also in compensation for the destruction of certain infected articles, amounted to £11 3s. 6½d., the "overtime" pay to the dis-

infectors, lime-washers, &c., amounted to £11 7s. 7d., so that the epidemic cost the Public Health Committee £22 11s. 1½d.

On the 26th of December, a girl residing in a house in Upper Abbey-street, was admitted into Cork-street Hospital, and was found to be in typhus fever, and on the same day the Adelaide Hospital received another typhus fever patient, a man. Both patients had no doubt contracted the disease from two girls who resided in 56 Church-street, and who are now in Cork-street Hospital. It appears that the three girls worked together in one room in a factory, and that the male patient was the clerk or overseer in charge of the room. Thus it will be seen that 18 cases of fever must be charged to 56 Church-street.

The rooms occupied by the persons who had been removed to hospital after the return of the "contacts" from the Refuge were disinfected, but I did not think it necessary to bring the other inmates back to the Refuge as I felt sure that the patients had been infected before the 19th of December. The late Dr. Murchison considered that the usual period of incubation of the disease was 12 days, but it might be several days longer.

No. 56 Church-street is a house of 4 stories and has no underground rooms. It contains 14 rooms, of which 4 are closets.

The ground floor had two rooms and a closet, with a total of 2,962 cubic feet; they were occupied by seven persons—a man, his wife, and four of their children, aged 18, 15, 13, and 9 years, and a nephew, aged 15.

As the by-laws relating to houses occupied by more than one family require 400 cubic feet for adults and 200 for children, the space was in excess of the requirements. No case of fever occurred in these rooms. As the house was built partially over a gateway there were fewer rooms on the ground floor than in the upper stories.

The first floor comprises two front rooms and two back ones. A closet was in connection with one of the latter. The right hand front room contains 1,495 cubic feet; to the rear of it a room and closet together contain 1,589 cubic feet = a total of 3,084 cubic feet. One family occupied these apartments; it consisted of a man, his wife, his wife's mother and seven children, aged 17, 14, 12, 9, 7, 4 and 1½ years. The

wife's mother and two girls slept in the front room, and the remaining seven persons in the back room and closet; in the latter case there was overcrowding. Eight members of this family were attacked by typhus fever.

The second front room has 1,200 cubic feet, and was occupied by five persons—a man, his wife, aged 38, a child (girl) aged 3, a boy, aged 5, and an infant. The mother and the girl contracted typhus fever, and were removed to hospital on the 18th of December. On the 19th of January the boy, aged 5 years, was removed to Cork-street. He had typhus fever. He may have been infected by the woman who was ill with the fever on the 1st of January. All the families on this floor were again removed to the Refuge, and disinfection of all the rooms was going on at the time of writing.

The second back room has 754 cubic feet, and accommodated two inmates (old women).

On the second floor there were 4 rooms and a closet. The right-hand side front room has 1,340 cubic feet of space. It was occupied by a man and his wife. They had ample cubic space. The other front room has 1,223 cubic feet of space. There were in it a man and wife and a child aged 5 years. The back room and adjoining closet were occupied by a woman and her adult son. They had 1,389 cubic feet. The second back room has 600 cubic feet and one inmate—an old woman. The top story comprises 4 rooms and a closet. The right-hand side front contains 1,446 cubic feet; it was occupied by a woman and her adult son. The other front room had 1,233 cubic feet, and was occupied by two elderly women. Both were admitted to Cork-street Hospital and died there. The back room and closet contained 1,389 cubic feet. Its occupants were a man, his wife and infant daughter, aged 6 months. The mother and her infant were the first cases admitted to hospital. The second back room has 600 cubic feet. Its inmates were a woman, her son, aged 15, and her daughter, aged 9.

The ground floor had one family of 7 persons; no case of illness.

The first floor had 3 families, comprising 17 persons, of whom 11 had fever. There was some overcrowding on this floor.

The second floor had 4 families, including 8 persons. No case of fever occurred amongst them.

The top story had 4 families, comprising 10 individuals. There was overcrowding in one room, but no case of fever occurred in that room. On this floor 5 cases of fever occurred.

Total number of families ..	..	..	13
" " individuals ..	..	..	42
" " cases of fever ..	..	..	16

The inmates of this fever-stricken house were, on the whole, very poor. Many of the men were day labourers; several of the women did charring. Two were engaged in making match boxes. One woman sold apples in the street. Several had been unemployed for some time. One man, who said he was a house painter, but, I believe, was only what is called a handy man, occupied, together with his family, a single room, for which he paid 1s. 6d. a week.

There was in two of the rooms some overcrowding, but the real overcrowding was, so to speak, that of families. When 13 families occupy 14 rooms and 4 closets in a house having a narrow hall and stairs, it is easily understood how rapidly infectious disease will spread throughout it. On each lobby the four doors were quite close to each other, and two persons could scarcely pass on the stairs without coming into contact with each other. Steps will be taken to reduce the number of families in this house. In hundreds of cases the number of families has been limited in the Dublin tenement houses. It is fortunate that the disease did not extend to other houses in the neighbourhood of 56 Church-street. This was probably due to the quick removal of both the sick and the sound from the house and its thorough disinfection.

In conclusion, it seems probable that poverty, overcrowding of some rooms, and the locating of too many families in an ill-ventilated house caused this outbreak of typhus fever.

ART. VI.—*A Case of Amenorrhœa.** By JOHN KNOTT, M.A., M.D., Ch.B., and Dip. Stat. Med. (Univ. Dub.) ; M.R.C.P.I. ; M.R.I.A., &c., &c.

SOME few years ago, when in daily attendance on an English lady, then resident in one of the suburbs of Dublin, a niece of my patient came to stay with her on a visit of some months' duration. There arose at that date something of a small-pox scare, and the young lady expressed a wish to be vaccinated : this small operation was performed—with a successful result. During the progress of the case I had, of course, an opportunity of ascertaining the general state of her physical health. She was a perfect picture of vigorous activity, well developed in every direction, taking daily a great deal of outdoor exercise—walking, cycling, tennis, and such-like—with the highest spirits and keenest sense of enjoyment, while displaying an excellent appetite and an unimpeachable digestion. Under these conditions, I confess to having felt a good deal startled on learning that she had not menstruated during the previous five years ; and the history of the case rather increased than diminished the surprise produced by the first announcement of the fact. She had had an attack of typhoid fever five years before. She was then in London, and had the best advice. She was treated with the "ice-pack" at an early date of her illness, as the temperature was running up rapidly, and when this treatment was first applied, some menstrual (? menorrhageal) flow had shortly before appeared. The ice-packing had the double effect of checking the menstrual flow and of lowering the temperature. Recovery was perfect, after a moderately long convalescence ; but the patient never saw a trace of menstrual discharge afterwards. When I questioned her as to her feelings on the subject, she told me, rather curtly, I thought, that she had "not the least wish ever to see it again." I daresay that she began to suspect that I "meant business ;" but my inquiries were really actuated merely by knowledge of the anxiety which such suppression usually seems to cause. However, this young lady felt no such trouble of mind.

* Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, on Friday, November 28, 1902.

The peculiar history led me to think that the case might not be wholly unworthy of a few minutes' attention from the Obstetrical Section of the Royal Academy of Medicine in Ireland. I have noted the records of very many cases of curious anomalies of the mysterious phenomenon of menstruation; and a mysterious phenomenon it surely still remains, even in presence of all the available scientific search-lights of the twentieth century. Cases have been reported in which the discharge appeared at birth. At least one has been published in which it did not commence till the seventy-fifth year. In a case recorded by Blancardi, the patient was still actively engaged in menstruating at the age of 106 years. But I have not been able to find a case exactly similar to the one which forms the subject of this communication. To me the specially surprising features were the *perfect health* and the *utter absence of menstrual molimina* which had continued throughout the whole period.

INDIAN MEDICAL SERVICE.

THE Military Secretary, India Office, has forwarded the following list of the candidates for His Majesty's Indian Medical Service who were successful at the Competitive Examination held in London on January 13th, 1903, and following days :—

	Marks
1 C. S. Parker, M.B. (Lond.), M.R.C.S., L.R.C.P.	- 3,413
2 F. N. White, M.B. (Lond), M.R.C.S., L.R.C.P. -	- 3,068
3 T. C. Rutherfordord, M.B., B.S. (Durham), M.R.C.S., L.R.C.P. - - - - -	- 3,037
4 D. Heron, M.B., B.Ch. (Edin.) - - - -	- 3,018
5 L. Reynolds, B.Ch. (Camb.), M.R.C.S., L.R.C.P.	- 2,987
6 H. H. Broome, M.B., B.Ch. (Edin.) - - -	- 2,940
7 C. G. Seymour, M.R.C.S., L.R.C.P. - - -	- 2,930
8 E. C. Taylor, M.B., B.Ch. (Camb.) - - -	- 2,890
9 D. P. Goil, M.B., B.Ch. (Edin.) - - - -	- 2,865
10 H. C. Keates, M.B., B.S. (Lond.) - - - -	- 2,860
11 R. A. Needham, M.B., B.S. (Vict.), M.R.C.S., L.R.C.P.	2,827
12 J. Kirkwood, M.B., B.Ch. (Edin.) - - -	- 2,812
13 A. Whitmore, M.B., B.Ch. (Camb.) - - -	- 2,782

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Selected Papers on Operative and Clinical Surgery. By the late WILLIAM STOKES, M.D., M.Ch. (Univ. Dub.), F.R.C.S.I., Knt.; Surgeon-in-Ordinary to Her Majesty Queen Victoria in Ireland; Surgeon to the Meath Hospital and Co. Dublin Infirmary; Professor of Surgery, Royal College of Surgeons; Ex-President of the Royal College of Surgeons, &c. Edited by WILLIAM TAYLOR, B.A., M.B. (Univ. Dub.), F.R.C.S.I.; Surgeon and Lecturer on Clinical and Operative Surgery, Meath Hospital and Co. Dublin Infirmary; Visiting Surgeon Cork-street Hospital; Member of the Council and Demonstrator of Anatomy, Royal College of Surgeons, Ireland; Fellow and Member of the Councils of the Surgical and Anatomical Sections Royal Academy of Medicine, Ireland. With a Memoir of the Author by ALEXANDER OGSTON, M.D., Regius Professor of Surgery, University of Aberdeen; Surgeon-in-Ordinary to the King in Scotland. London: Baillière, Tindall & Cox. Dublin: 16 Lincoln-place. 1902.

THIS peculiarly interesting and instructive addition to our surgical literature contains a series of thirty-six contributions, published, at various intervals of his professional career, by the late Sir William Stokes, who heroically laid down his life in the service of his country in the recent South African struggle. We must qualify this description, however, by noting that the last two numbers of the series represent complex entities. The thirty-fifth consists of a number of "Occasional Addresses," and the thirty-sixth includes two "South African Papers."

The present selection from the sum total of Stokes's original contributions to the surgical knowledge of his contemporaries has been judiciously made and ably edited by his former pupil and subsequent colleague at the Meath Hospital—

Mr. William Taylor, F.R.C.S.I.—whose professional record so far as it has hitherto been registered, bids fair to rival that of his distinguished master. To those who are acquainted with the professional attainments, the scholarly acquirements, and the cultured literary and æsthetic tastes of the late Sir William Stokes—as we feel sure that most of our readers throughout the world must, necessarily, be—it is superfluous to say that they will find in this volume some of the most valuable and inspiring contributions to the surgical literature of the past generation. The volume has—very appropriately—been published by the eminent firm of Messrs. Baillière, Tindall & Cox, which has so long been intimately connected with the professional literature of Ireland; and, it is hardly necessary to add, has been produced with their characteristic good taste in the selection of type, paper, and binding.

The text proper is preceded by an appreciative memoir from the pen of Professor Alexander Ogston, M.D., of Aberdeen, the youthful companion of his—their—mutual “Wanderjahre,” and his subsequent life-long friend and admirer. We specially recommend the perusal of this “Memoir” to the junior members of our profession as an inspiring lesson in surgical biography. It shows what the ambition of a noble-minded professional man should be, and what the mutual relationship of two of the intellectual giants of surgery has been. We know of no better moral lesson than that which is furnished in its pages.

The whole of the series of papers included in this volume illustrate Stokes’s lofty and successful ambition of being a pioneer in all the regions unexplored, or too little explored, of surgical practice. The first chapter deals with “Aneurysm,” and illustrates his devoted efforts to give the last chance of relief to some of the victims of this deadly and painful morbid condition. He was, as many of our readers must have already remembered, one of the few early enthusiasts who ventured to deligate the abdominal aorta. Although the ultimate result was unsatisfactory, the procedure gave the patient the only chance which could be offered; and the fatal issue was surely due to no deficiency of care or skill on the part of the operator. The second chapter deals with the interesting, and

very troublesome, "Rhinoplastic Operation," and gives every available information on the subject. One of the illustrations (Plate IV.) shows a somewhat modernised reproduction of the *Icon Octaa (sic)* of the famous "*De Curtorum Chirurgia per Insitionem*" of Gaspar Tagliacozzi, which appeared in Venice in 1597, and the original procedure of whose author was first carried out in this country by Stokes.

But it would be impossible, within the necessarily limited space of a review, to dwell on the various interesting and original features of Stokes's contributions to surgery. Suffice it, therefore, to say that every one of them is full of information and inspiring example. We would fain dwell for a moment on the pages which reproduce (Chap. XXXV.) the almost inspired *Address in Surgery* delivered at the "Jubilee" Meeting of the British Medical Association, held at Worcester in 1882, which dealt the last deadly blow to the obstructive tactics of the ignoble army of anti-antisepticians.

We have done. We will close by expressing our devoted admiration of the instruction and example afforded by the life and writings of our illustrious fellow-countryman, whose untimely loss we have so recently had to deplore. At the same time, we cannot help congratulating ourselves on the fact that his works have fallen into the hands of so able and representative an editor as Mr. William Taylor; and we will just express the final wish and hope that all our readers will profit by the careful perusal of the resultant volume now before us.

Practical Physiology. By A. P. BEDDARD, M.A., M.D.; J. S. EDKINS, M.A., M.B.; LEONARD HILL, M.B., F.R.S.; J. J. R. MACLEOD, M.B.; and M. S. PEMBREY, M.A., M.D.
London: Edward Arnold. 1902. 8vo. Pp. 195.

CO-INCIDENT with the greater importance that is nowadays attached to Practical Physiology as a subject of the medical curriculum, a number of text-books of late years have appeared. The fact, however, that teachers from four of the important London Medical Schools have combined to issue an additional one, may be taken as evidence that none of those already in existence meets with universal approval. It remains to be seen whether the one before us will, to a greater extent, fulfil the

conditions necessary to insure a more general acceptance. Compared with others, the scope of the work may be said to be intermediate between the smaller "*Instructions for Class Work in Practical Physiology*" by Schäfer, and the more comprehensive "*Practical Physiology*" of Professor Stirling.

The work is divided into elementary and advanced courses, and each is appropriately sub-divided into sections dealing with "Experimental" and "Chemical Physiology." The elementary courses obviously purport to cover the ground which, in the authors' opinions, should be traversed by every medical student. The advanced courses treat of such additional work as would reasonably be required of candidates proceeding to higher examinations, whether medical or otherwise.

Dealing with these divisions in order, the elementary courses comprise sixty-nine chapters (278 pp.), forty-five of which are allotted to "Experimental" and nineteen to "Chemical Physiology." The proportion of the former seems undue, but seventeen of the chapters are devoted to demonstrations of vascular, respiratory, and alimentary phenomena, the majority of which are usually shown as illustrations of class lectures. It is therefore true, as the authors claim, that less prominence is given to muscle-nerve physiology, and more to physiology having a clinical bearing, than is usually the case in such textbooks. The change is certainly in the right direction for the medical student; and, no doubt, further experience in the employment of the book as a manual of class instruction will, in the future, lead to a more extensive substitution of the one kind of work for the other. The principle, however, which underlies the writing of the individual chapters may not commend itself to all.

In the experimental part of the book there appears to be overmuch description of what *should* be obtained, while the instructions for the performance of the actual experiments are somewhat meagre and not sufficiently didactic. Moreover, the demarcation between the descriptive parts and those giving such instructions is not obvious at a glance. The use of two separate types would appear to us to have been an improvement, if the principle be admitted that it is desirable to have

any but the minimum of "theoretical description" in a practical work.

The chapters on elementary chemical physiology are, on the whole, well written, and the subjects treated of judiciously chosen. In some of these, however, notably that on blood coagulation, the same tendency to description as contrasted with experiment creeps in. For example, a whole series of conditions which influence the process are enumerated, many of which could not be applied by the student, and are obviously not intended to be so, while the study of the phenomenon itself stops short with experiments on blood plasma, without going on to the further stage of those with solutions of fibrinogen precipitated by the student from the plasma, as could readily be done within the time ordinarily allotted to a class meeting. Again, it seems useless to introduce a paragraph on nitric oxide hæmaglobin when no mention of the method of preparing it is given; nor is it to be expected that junior students should prepare it.

In the chapter on foods and the principles of dietetics there are five pages of descriptive matter, and only two paragraphs of instructions for experiments. In that on gastric juice, where the experiments are more numerous, Maly's theory of the formation of hydrochloric acid is fully given in ordinary type, but no allusion is made to the simpler explanation on the ionic hypothesis. Again, it is rather disappointing, and somewhat of a reproach to chemical physiology, that the tests for acetone in urine do not go the length of differentiating this substance from alcohol, as can readily be done by the employment of Reynolds' mercurial test, or even by the addition of ammonia solution, instead of that of caustic potash in the iodoform test. No mention is made either of the now generally adopted modification of the Kjeldahl method for the estimation of total N., by which the stages of combustion and distillation are carried out in the same flask. These are minor blemishes, but blemishes which one regrets in an otherwise useful section.

The advanced sections, particularly the experimental part, and advanced demonstrations, are much to be commended, and constitute the best chapters of the book. It is almost a pity they were not issued as a separate volume. Much of

this ground is not covered, certainly not covered so well, by any other practical English text-book, while the same cannot be said of the elementary sections. Indeed, if the authors had confined themselves to the issue of an advanced syllabus alone, based on the lines here adopted, little but unqualified praise could have been given to their efforts, and physiologists, one and all, would have been indebted to them.

The Operations of Surgery. By W. H. A. JACOBSON, M.Ch. Oxon., F.R.C.S., Surgeon Guy's Hospital; and F. J. STEWARD, M.S. London, F.R.C.S. Assistant Surgeon to Guy's Hospital, and to the Hospital for Sick Children, Great Ormond-street, Surgeon-in-Charge of the Throat Department, Guy's Hospital. Fourth Edition. With 550 Illustrations. In two volumes. Vol. I., pp. 727. Vol. II., pp. 776. London: J. & A. Churchill. 1902.

THIS work, which is intended especially for the use of those recently appointed on a hospital staff and for those preparing for the higher examinations, has now reached its fourth edition, and has been issued in two volumes, which in itself is a very decided improvement upon the former editions, if only as a matter of convenience. In the preparation of this edition Mr. Jacobson had to avail himself of the assistance of Mr. F. J. Steward, who is responsible for the revision of the last 20 pages of Volume I. and of the whole of Volume II., Mr. Jacobson's share coming to an end in Vol. I. with the close of the section on "Removal of the Breast."

Volume I. concludes with the section on the surgery of the heart and pericardium, and comprises no less than 706 pages of text. It bears ample evidence of thorough revision in each chapter, and has many new and instructive illustrations added. The same plan of division into regions has been adopted in this as in the previous editions, and in the first section, devoted to the surgery of the upper extremity, the most noticeable additions and improvements are to be found in the chapters devoted to the surgery of tendons, excision of the wrist, and excision of the shoulder.

In the section devoted to the surgery of the head and neck full justice is done to the advancements made, since the last

edition was published, in connection with the surgery of the mastoid and the diagnosis and removal of cerebral tumours.

Horsley's operation for the removal of the Gasserian ganglion is still described as he originally described it in 1891, but we understand that he no longer divides the dura mater so as to expose the temporo-sphenoidal after the full length of bone was removed as he used to do in his early cases.

The section on the removal of the breast has been very fully brought up to date, and new figures, illustrative of Mr. Watson-Cheyne's methods of making the skin incisions for the complete removal of the gland where the tumour is situated in different regions of the breast, have been added.

Volume II. comprises 754 pages of text, and is devoted mainly to the surgery of the abdomen, pelvis and lower extremity. It does not show evidences of the same careful revision that Vol. I. does; for example, Mr. Ball (now Sir Charles Ball) has modified his method of radical cure for inguinal hernia, but we still find his original operation described. The modification was published, we think, in 1898, his paper being read, we believe, at the annual meeting of the British Medical Association in 1898. There is no description given of performing the radical cure of femoral hernia, by closing the upper opening of the crural canal. At least one excellent method, which we have personally proved most satisfactory, was devised and described in the *British Medical Journal* some six or seven years ago by Mr. T. E. Gordon, of this city.

There is no description or illustration of Maydl's method of performing inguinal colostomy or its modifications—a procedure which, when it can be carried out, we have found most satisfactory. Throughout this section we find the word "colotomy" used, whereas according to the correct nomenclature the word should be "colostomy." There is not a single illustration of any method of performing the anterior operation (inguinal colostomy).

The section devoted to the surgery of the kidney is good, but here again we find the terminology wrong, the word "nephrorrhaphy" being used instead of "nephropexy." Nephrorrhaphy means simply suturing the kidney, such as would be done after a free incision to explore for stone,

whereas, when we want the correct term for the fixation of the kidney we get it in nephropexy from *πῆγνυμι*=I make fast.

The chapter devoted to operations on the ureter is new, but not satisfactory, as there are no descriptions or illustrations of the operations of implanting the ureters into the bladder, vagina, or bowel—procedures which may occasionally have to be undertaken.

The section on appendicitis is excellent, as is also that on the various methods of intestinal anastomosis.

The section devoted to the surgery of the stomach could have been easily improved, though there are evidences of revision. Nothing is said about Tupolske's method of doing the operation of "pylorotomy" in two stages, where the patient is much debilitated, a procedure spoken of very favourably by Czerny and others, in which a posterior gastro-enterostomy is done first, and then, three weeks later, the pylorus is removed.

There is no description or illustration of the method described by Roux of doing posterior gastro-enterostomy, with the object of obviating the occurrence of the "vicious circle."

Taken in all, the work well maintains the excellence which previous editions led us to expect. The few blemishes to which we have drawn attention detract but little from its value.

The authors would do well to illustrate more fully, and especially in connection with the abdominal sections, in future editions. This would much enhance the value of the work, which, so far as the text is concerned, is far and away superior to anything published in this country.

We heartily congratulate the authors, and strongly recommend the work to every surgeon.

The Pharmacological Action and Therapeutic Uses of the Nitrites and Allied Compounds. By the late D. J. LEECH, M.D. Edited by R. B. WILD, M.D. Manchester: Sherratt & Hughes. 1902. 8vo. Pp. 187 + viii.

THE late Dr. D. J. Leech was a man of the noblest character, and of high scientific attainments, and his premature death was a serious loss, especially to the young cult of pharmacology. He was a careful observer, a good physiologist, and an en-

lightened physician, and in his time accomplished some excellent work.

In the volume before us we have his collected writings upon a branch of therapeutics to the elucidation of which he had devoted much time. As an appropriate prelude the book leads off with an introductory lecture, delivered in 1884, on the "Relation of Pharmacology to Therapeutics," which affords a valuable indication of the lines upon which Leech taught and conducted his researches. The three succeeding papers deal with ethyl nitrite under various aspects, and the fifth paper discusses the duration of action of medicines, with especial reference to the nitrites and nitroglycerin. The remainder, and the most valuable part, of the text embodies, in a revised form, the Croonian Lectures for 1893—"On the Pharmacological Action and Therapeutic Uses of the Nitrites and Allied Compounds." A copious bibliography is added, and the work is completed by 28 plates of tracings in illustration of the physiological experiments.

Altogether, then, we have a compact and admirable account of an important group of remedies, and there is no physician or physiologist who will not be the better and the wiser for having studied it.

The Elements of Bacteriological Technique: A Laboratory Guide for the Medical, Dental, and Technical Student. By J. W. H. EYRE, M.D., M.S., F.R.S., Edin.; Bacteriologist to Guy's Hospital, London, &c. With 170 Illustrations. Philadelphia and London: W. B. Saunders & Co. 1902. 8vo. Pp. 371.

THIS is an eminently practical book. It gives explicit numbered directions for the performance of every bacteriological procedure. With this manual in hand the student can hardly go wrong—*provided that he follows the directions*. But that is the difficulty. The directions cannot be carried out unless in a completely fitted laboratory. There is no sense of proportion; the essential points are not clearly marked off from those of minor importance. Flasks and solutions are repeatedly directed to be used in the sterile state when it is quite unnecessary to have them so, as they

and their contents must necessarily be sterilised at a later stage of the procedure. For the examination of a sample of milk—to give an example of what is meant—Dr. Eyre requires the following apparatus:—

Case of sterile capsules (25 cc. capacity).

Case of sterile graduated pipettes, 10 cc. (in tenths of a cubic centimetre).

Case of sterile graduated pipettes, 1 cc. (in tenths of a cubic centimetre).

Flask containing 250 cc. sterile bouillon.

Tall cylinder containing 2 per cent. lysol solution.

Plate levelling stand.

Case of sterile plates.

Tubes of nutrient gelatine-agar (+ 10 reaction).

Tubes of wort-gelatine.

Tubes of nutrient agar (+ 10 reaction).

Water bath, regulated at 42°.

Bunsen burner.

Grease pencil.

He requires the inoculation and pouring out of eight gelatine; agar tubes, three wort gelatine tubes, and three agar tubes. For tubercle he requires five guinea pigs, three of which have been previously tested with tuberculin, per sample. Each guinea pig is to be accurately weighed *each day* after inoculation till its death or slaughter. The analyses conducted according to Dr. Eyre are conducted according to "counsels of perfection," and unless the bacteriologist has at his disposal the resources of an unusually well-equipped laboratory and the most ample provision of nutrient materials, he will hardly succeed in following the advice given in this book.

The illustrations consist for the most part of sketches of apparatus ready set up. They are original, and of the highest practical value. We find also illustrations of the several types of colonies that occur on gelatine plates, and of the types of stab-cultures, together with Chester's valuable nomenclature. Explicit directions are also given for the determination of metabolic activity and enzyme production, thermal death point, and resistance to disinfectants.

Occasionally there are slight errors—*e.g.*, on page 139,

where within the first 4 lines we find "cc." three times used instead of "cm." Serious errors, whether of commission or omission, are singularly few.

The only defect in an otherwise admirable piece of work is the author's singular fondness for complexity—begotten, no doubt, of thoroughness, but tending to dismay the operator of slight experience and moderate resources. Perhaps Dr. Eyre's real object—unspoken, of course—is to deter such unfavourably circumstanced workers from undertaking bacteriological investigations.

Taken all round, the author has succeeded in producing a standard, up-to-date, and essentially practical guide, which we can heartily recommend to all working bacteriologists—a book that deserves a place beside the works of Heim and Novy on the reference-shelf in every bacteriological laboratory.

Manual of Bacteriology. By ROBERT MUTR, M.A., M.D., &c., Professor of Pathology, University of Glasgow; and JAMES RITCHIE, M.A., M.D., &c., Reader in Pathology, University of Oxford. Third Edition. With 150 Illustrations. Edinburgh and London: Young J. Pentland. 1902. 8vo. Pp. xviii. + 548.

WE have already dealt so fully with this deservedly popular text-book, in its earlier editions, that we feel it unnecessary to do more than point out that the third edition is brought fully up to date. We find descriptions of Van Ermengem's *Bacillus botulinus* (the cause of sausage-poisoning), of *B. aërogenes capsulatus*, and of the ætiology of yellow fever, with full reference not only to Sanarelli's now much-doubted results, but also to the mosquito theory as elaborated by the U. S. Army Commission. There is also a very good account of the life-history of the malarial parasite, illustrated by a fairly demonstrative series of micro-photograms. Leishman's modification of Romanowsky's method of staining the parasite is given, but no mention is made of Jenner's very excellent compound of eosin with methylene blue. The notice of vaccinia and variola is rather disappointing, the exploded bacilli of Klein, Kent, and Copeman being dealt with at some length, whilst the excellent work of Guarnieri,

v. Wasielewsky, and Hückel on the effect of vaccination on the cornea of rabbits is passed over in silence. Some mention might, we venture to think, have been accorded to the histological work of G. Mann. The complex subject of immunity is dealt with in a most instructive and well-written chapter, in which we find a statement of Ehrlich's now well-known side-chain theory of the origin and mode of action of anti-toxins, anti-hæmolysins, &c. A diagram or two would help the reader to understand the relation of the immune body to the cell on the one hand, and the complement on the other, and here and there one sighs for more clearness in the language used. Thus, for example, on p. 460 we read, "Some of the fresh serum *turns out* some of the toxoid," &c. The precise significance of the phrase italicised is far from clear. The book preserves its well-known appearance, and, indeed, possesses every attraction that neat binding, clear type, and good paper can give it.

The Blood: How to Examine and Diagnose its Diseases.

By ALFRED C. COLES, M.D. Second Edition. With Six Coloured Plates. London: J. & A. Churchill. 1902. 8vo. Pp. 286.

We are not surprised that Dr. Coles' work should have run so speedily into a second edition. It provides a thoroughly useful compendium of the methods that have proved of real clinical value in the examination of the blood. The author exercises a wise discretion in the selection of his procedures, and avoids the error of overwhelming the reader with a multitude of methods, many of which, when all is said and done, are of doubtful clinical utility. He confines himself to the examination of the cellular elements, the estimation of the hæmoglobin, and the examination of the blood in the fresh state and in stained films. The determination of the alkalinity, of the coagulability and of the specific gravity are omitted, unwisely, we venture to think, in the case of the last-mentioned property, which may often be utilised for the estimation of hæmoglobin in the absence of the proper instrument for that purpose.

For counting the corpuscles Dr. Coles, in common with

the majority of workers in this country, prefers the Thoma-Zeiss instrument, and for leucocyte counting he has obtained good results with Zappert's modified counting-chamber.

For hæmoglobin determination the well-known instrument of v. Fleischl is described in detail as being evidently preferable to those invented by Gowers and Oliver.

The greatest practical interest, however, attaches to the author's mode of making blood films for staining. He prefers the slide method. There can be no doubt that when the slides used are really high-class articles, with evenly ground edges, the results that can be obtained with this method are nearly as good as can be had by using cover glasses, whilst the slide preparations have the very great merit of ready portability from bed-side to laboratory.

We quite agree with Dr. Coles as to the vital importance of making the films so thin that the part at least is dry within five seconds. All practical hæmatologists know that the only dry films worth staining are those that have become dry within a very few seconds, and that the ability to make such must be acquired before success can be achieved in differentially counting leucocytes or hunting for the malarial parasite.

There is nothing new in the methods of fixation given, but something that is new and useful has been omitted. We refer to the wet-film method, which when combined with formalin-vapour fixation and staining by Jenner's compound of methylene-blue and eosin probably yields the best results of all.

We have left ourselves but little space in which to deal with the author's description of the general morphology of the blood, and its alterations in the anæmias, leukæmia, and malaria, as well as under various other diseased conditions. There is little that is novel but much that is sound and of practical value. Certain tabular statements of the results of blood counts made in cases of pernicious anæmia and leukæmia by Dr. Coles himself, show that he has put a good deal of work into his studies of the blood. The task of observing and classifying 1,500 leucocytes is, if easy, excessively tedious and takes much time.

A word as to the coloured plates, of which there are six, done by the author, and reproduced by West & Newman.

They are faithful representations of the objects they are intended to depict. Most of them are taken from films stained with hæmotoxylin and eosin—the combination which, when properly manipulated, still appears to us to yield the most distinctive and elegant results, and which is quite indispensable in the study of nuclear structure. One plate represents the leucocytes as stained with Ehrlich's "triacid," and does it very well indeed.

One cannot help wondering why the author should say, as he does on page 36, that he cannot recommend the use of any of the triple stains for clinical purposes. With what other combination can he—for example—diagnosicate a narrow cell from a large mononuclear of the ordinary kind?

Taken all round the work has a definite value, especially for readers who, being unacquainted with German, cannot derive their information direct from the fountain-head. But it requires to be read in conjunction with an original work like that of Ehrlich and Lazarus.

Suggested Standards of Purity for Food and Drugs. By C. G. MOOR, M.A., F.I.C., F.C.S.; Joint Author of "Applied Bacteriology," "Aids to the Analysis of Food and Drugs," "Water Analysis," "Milk and Milk-Products," &c.; late Senior Demonstrator Public Health Laboratories, King's College, London; late Public Analyst to the City of Exeter; Chief Chemist to the Ashanti Goldfields Corporation. London: Baillière, Tindall & Cox. 1902. Crown 8vo. Pp. 260.

THIS carefully prepared volume undoubtedly meets a distinct want in the series of reference text-books. It is evidently the work of a master of the subject which he undertakes to teach. The information which it places within the easy reach of all is most important in the present state of medical, and pharmaceutical, and legal, practice. The application of the powers supplied by the "Food and Drugs Act" depends on the availability of such knowledge as that which is here so well selected and so lucidly defined. Accordingly, the work should be in the hands of such responsible persons as town clerks, as well as their medical advisers, as it gives the information requisite

for decision of questions regarding the amenability of the vendors of foods and drugs. The clearness and accuracy of the information on these very useful and important subjects, which is here collected by the author, are worthy of the highest praise. We know of no other source from which such information can be derived without the expenditure of enormous trouble. The British Pharmacopœia, while giving careful directions as to quantities, weights, &c., in the compounded official preparations, is extremely deficient in its supply of information regarding the quality and activity of the constituents of the raw drugs. And although some of the "Commentaries" and "Companions to" the British Pharmacopœia supply a great deal of this missing knowledge, we can confidently recommend the present convenient and reliable little manual as preferable for fulness, accuracy, and lucidity to any one of them. We cordially thank the author for the information which he has thus placed so conveniently within our reach. The volume is issued in the usual superior style and taste which characterise the medical publications of Messrs. Baillière, Tindall & Cox. We feel sure that it will meet with the success which it thoroughly deserves, and it is unnecessary for the best friends of author and publishers to wish it more.

Atlas and Epitome of Otology. By GUSTAV BRÜHL, M.D., Berlin; and PROFESSOR A. POLITZER, Vienna. Authorised Translation from the German. Edited by S. MACCUEEN SMITH, M.D. With 244 coloured figures on 39 lithographic plates, and 99 text illustrations. 8vo Pp. 292. Philadelphia and London: W. B. Saunders & Co. 1902.

THIS most admirable book fills a want long felt of an illustrated clinical handbook of ear diseases so small that a busy man may read it, so moderate in price that all may buy it, and so accurate in its information that all may trust it.

It represents the work of a distinguished teacher, done in a thorough and comprehensive manner.

The translator aims to give an accurate but liberal expression of the author's ideas, rather than a literal exposition of the German text. The book is both didactic and clinical in

its teaching, the latter aspect being especially adapted to the wants of the student. Particular attention is paid to the exposition of the minute anatomy of the ear, a working knowledge of which is so essential to an intelligent conception of the science of otology. The illustrations are very beautifully executed in colours, and illuminate the text in a singularly lucid manner, portraying pathological changes with such striking exactness that the student should receive a deeper and more lasting impression than the most elaborate description could produce.

The association of Professor Politzer in the preparation of the Atlas, and the use of so many valuable specimens from his notably rich collection, very much enhances the value of the work before us.

We can heartily commend this translation to all English-speaking students and practitioners who want a complete, readable, and accurate Atlas of the anatomy, physiology, and pathology of the organ of hearing.

A Manual of Hygiene. By W. H. HAMER, M.A., M.D., &c.;
Lecturer on Public Health, St. Bartholomew's Hospital;
Assistant Medical Officer of Health, Administrative County
of London. London: J. & A. Churchill. 1902. Svo.
Pp. 622.

THIS is a well written, up-to-date Manual of Hygiene, well adapted for the use of candidates for the Diploma of Public Health. It contains no fewer than 93 illustrations, and is printed in good, clear type on excellent paper. Dealing exhaustively with none of the subjects of which it treats, it leaves none of any importance untouched. A short chapter sketches the rise and progress of Preventive Medicine. Air is treated of at great length, the chapter on it occupying 83 pages. We are glad that no space is taken up in a minute chemical account of the constituents of the atmosphere—the ordinary medical graduate is presumed to have obtained this information in his undergraduate course. On the other hand, the practical work in examination of air, normal and abnormal, is very fully described, in some instances in even greater detail than is to be found in many text-books on practical

chemistry. A good account of eudiometry is given. Three processes for the determination of carbonic acid in the air are given. One of these (Angus Smith's method) is so simple that anyone almost could employ it. It consists of a set of bottles and a solution of lime (baryta would be better). If on shaking the solution in a 6 oz. bottle of air turbidity is produced, the air contains 11 parts of carbonic acid per 10,000 parts of air, the proportion in normal air being only 0.4 to 0.5 parts. The various sources of air pollution are fully pointed out. Although the electric light is believed to cause the production of a small amount of nitric acid in rooms, Dr. Hamer considers that it is greatly superior, from a health point of view, to gas illumination.

Authorities quoted by the author point out the great mortality from phthisis which is produced by vitiated air. Dr. Niven, Medical Officer of Health for Manchester, investigated the cause of its excessive prevalence in 77 common lodging-houses in that city, and attributed it chiefly to the influence of impure air. The phthisis death-rate was over 20 per 1,000, whilst the mortality of the whole of Manchester at the ages 25 to 45 was 3.95 per 1,000. This latter is, however, very high, and exceeds that of Dublin by nearly a third, though Dublin has an unenviable notoriety for its high phthisis death-rate. A very fair description of the principal methods of ventilation concludes the chapter on air.

The chapter on water comprises 46 pages. It is not the best part of the book, but still it is well and clearly written. It would have been well if some diagrams showing the common microscopic objects found in water, especially impure, had been given.

There is an excellent chapter on soil, and in which a little geological information is given, such as candidates for Public Health Diplomas are sometimes questioned on, especially at the Royal University. Sir C. A. Cameron's researches on the incidence of enteric fever in the gravel and clay districts in Dublin are referred to. The most recent information as to the viability of the *Bacillus typhosus* in soils is given. It has been shown that as regards phthisis there is less of it amongst populations living on pervious soils than amongst those residing on impervious ones. This really

means that the wetter a soil the more consumptive are the people on it.

In the chapter on food much information is contained. The connection between food and drink and certain diseases is treated of. The analysis of milk is described, but we think that 2 cubic centimetres is rather a small quantity to take for the purpose; 5 cc. is a better quantity. This chapter is well illustrated.

"The collection, removal, and disposal of refuse" constitutes Chapter VI. It is concise, and describes the best forms of w.c.s., drains, sewers, traps, &c., and also treats of "sewage" disposal.

The remaining chapters deal with dwellings, schools, hospitals, infectious diseases, disinfection, vital statistics, and sanitary administration and sanitary law.

We can strongly recommend this excellent work to the attention of all who are interested in the administration of public hygiene, or, indeed, we might say of private hygiene, too.

A Manual of Medical Treatment or Clinical Therapeutics.

By I. BURNEY YEO, M.D., F.R.C.P.; Emeritus Professor of Medicine in King's College, London; Consulting Physician to King's College Hospital; Hon. Fellow of King's College; formerly Professor of the Principles and Practice of Medicine and of Clinical Therapeutics in King's College, and Examiner in Medicine at the Royal College of Physicians; Author of "Food in Health and Disease," &c., &c. New and Revised Edition. London, Paris, New York, and Melbourne: Cassell & Company, Ltd. MCMII.

THE merits of Dr. Burney Yeo's "Manual of Medical Treatment" have already been so thoroughly established, and so fully and deservedly recognised by the profession throughout the world, as to render detailed criticism of this new and revised edition practically unnecessary. The author tells us that "the vast amount of material—not all, certainly, of equal value—which is being so rapidly produced in connection with the subject of therapeutics, has necessitated a most careful examination and sifting in order to retain what is likely to be of lasting service, and to discard that which, at best, can only

be destined to a temporary popularity." And, in the present edition, "in accordance with the suggestion of friendly critics," some additional subjects are dealt with, including the treatment of hay fever, paralysis agitans, cerebral tumours, erysipelas, cerebro-spinal fever, rickets, scurvy, and purpura.

If in the endeavour to fulfil the first duty of a reviewer—which we have been told is to find fault with something—we felt disposed to express dissent from any opinion expressed by the author, it would, perhaps, be with his implied approbation of the opinion that the sporadic form of "epidemic cerebro-spinal meningitis" "is closely related to, if not identical with, the disease described as *posterior basic meningitis*." Now, in Dublin we have had a good deal of experience of cerebro-spinal meningitis, and we flatter ourselves that we know most things about this interesting disease. As a historic fact it was first specially recognised and described in this city by the late illustrious physician, Dr. Mayne, who was at the time of its recognition the Visiting Medical Officer of the North Dublin Union Hospital. Both diseases are met with more especially in childhood and youth. But one of the most distinguishing characteristics of epidemic cerebro-spinal meningitis is the way in which the morbid process travels upwards, from the upper end of the spinal cord, over the *convexities of the cerebral hemispheres*, and *not* forwards on the basilar aspect of the brain. This, however, is but one of a few small spots on the illuminating surface of a peculiarly accurate and instructive work.

The Guide to South Africa. Edited annually by A. SAMLER BROWN and G. GORDON BROWN. 1902-1903 Edition. Tenth Edition. London: Sampson Low, Marston & Co. Cape Town, Port Elizabeth and Johannesburg: J. C. Juta & Co. 1902. 8vo. Pp. lx + 474.

LITTLE change from the ninth edition is observable in the present issue of this invaluable work. At page 290, however, we find some interesting facts about the closing stages of the war in South Africa. "By means of block-houses and barbed-wire fences, the Boers' forces were so harried and reduced, that on April 9th, 1902, the Commandants, having asked

and obtained permission to do so, met at Klerksdorp, within the British lines, with a view to formulating acceptable proposals of peace. After several discussions an agreement was arrived at on May 31st, 1902."

"Some 20,000 men were still left under their command, but, outside of these, nearly the whole nation was being fed and boarded at the expense of Great Britain. In addition to the thousands of prisoners-of-war detained at St. Helena, Bermuda, Ceylon, and elsewhere, the Refugees in the Concentration Camps formed a total, in January, 1902, of 121,965 (Transvaal, 60,151; Orange River Colony, 42,404; Natal, 19,175; Cape Colony, 235)."

"At the conclusion of the war there were 202,000 British troops under arms, of which 83,500 were Volunteers, Colonials, Militia, and Yeomanry. It is proposed to retain a garrison of from 50,000 to 70,000 men in the country."

The foregoing extracts will give the reader some idea of the interesting character of the work, which has now completed its tenth year of publication.

The Edinburgh Medical Journal. Edited by G. A. GIBSON, M.D., F.R.C.P. Ed.; and ALEXIS THOMSON, M.D., F.R.C.S. Ed. New Series. Vol. XII. Edinburgh and London: Young J. Pentland. 1902. 8vo. Pp. xxxvi + 592.

THIS classical periodical pursues the even tenour of its way. Thirty-six pages are devoted to the topic of Medical Education in the United Kingdom, the article forming originally part of the number of the Journal for October, or the "Students' Number."

Each monthly number opens with a series of paragraphs dealing with current topics, after the fashion set by Mr. Malcolm Morris when he became Editor of *The Practitioner*.

Dr. G. A. Gibson, one of the editors, leads off the original communications with "The Morison Lectures" on the nervous affections of the heart, which were delivered in the Royal College of Physicians of Edinburgh on January 20, 22, and 24, 1902. Founded in 1864 by Sir Alexander Morison, of Bankhead, a former President of the College, the Lecturership was originally intended to meet a want in the medical curri-

culum by supplying a succession of lectures upon insanity. Some twenty years ago the College authorities widened the scope of the Morison Lectures so as to embrace other branches of medicine besides insanity, the only stipulation being that their subject should be in some way connected with the nervous system.

Dr. Gibson's lectures in the present series are occupied solely by sensory disorders. Motor disturbances are left for consideration during a future series. The topics discussed in the three lectures published in the volume under review are treated under the headings—"clinical," "pathological," and "therapeutical." Heart-pain is the text upon which Dr. Gibson enlarges with all his wonted literary skill and erudition. He is optimistic in regard to the therapeutics of the sensory affections of the heart and circulation, which "are in truth and in deed wonderfully amenable to careful management."

There are many other important articles in this volume, notably one on the *Ætiology of Tuberculosis* by Dr. Arthur Latham, the winner of the King's prize for an essay on the erection of a sanatorium for the treatment of tuberculosis in England.

The other departments of the Journal are well represented in this—the twelfth—volume of the New Series.

Transactions of the American Pediatric Society. Edited by
WALTER CARR, M.D. Vol. XIII. 1901.

THESE interesting Transactions are reprinted from the "Archives of Pediatrics," and consist of papers read at the Thirteenth Session of the Society held at Niagara the previous year.

There are many papers of interest, although, as common in all Societies, some years are more fruitful in good papers than others, and the selection before us has been outstripped by previous numbers.

The papers of most interest are:—An Address on Summer Diarrhœa, by the President, and an Analysis of 555 Cases, by Dr. Kerley; A Review of Congenital Heart Disease, by Dr. Morse; Cyclical Albuminuria, by Dr. Churchill; Idiocy and Cretinism, by Dr. Lichtenstein;

and Pyloric Stenosis, by Dr. Saunders. There are many other good papers, and much useful work is collected in the volume.

It is an excellent publication.

Constipation. By G. SHERMAN BIGG, F.R.C.S.E.; Fellow of the Royal Institute of Public Health; Member of the Royal College of Surgeons, England; Licentiate of the Society of Apothecaries, London; Late Surgeon-Captain Army Medical Staff; Staff Surgeon to Major-General Sir Herbert Macpherson, V.C., K.C.B.; Surgeon in Medical Charge of Officers, Shorncliffe Camp; Surgeon-in-Charge, Native Followers' Hospital, Allahabad; Surgeon-in-Charge, Women's Hospital, Allahabad. London: Baillière, Tindall & Cox. 1902. Cr. 8vo. Pp. 67.

THIS well-written and beautifully-printed volume forms a thoroughly scientific (and philosophical) study of the causes, phenomena, and consequences of an unhealthy condition which deserves far more consideration than it has generally received. As the author tells us, "Every day the public and the profession are learning more and more of the germ origin of disease; but the germ without a suitable soil for maturation would die a premature death. In a great measure due to constipation making the soil fertile for the reproduction of germs, the individual is rendered susceptible to disease. Germs are the attacking force, while the constitution is the fortification, against which all efforts are futile and powerless unless a weak spot in the defence is found. No matter whether the germ be one of cancer, consumption, or any infectious disease, so long as the constitution is sound, no danger need be apprehended." It is a considerable time since we have met so much pathological truth contained in so small a space as in these sentences. And throughout all pages of the volume the consideration of the causes, necessary results, and complicated sequelæ of a too-often neglected condition is carried out in the same philosophic tone.

We regard this small book as a most important and timely contribution to the investigation of a very serious clinical problem, and cordially recommend its perusal to all our

readers. We cannot help adding, incidentally, that the type and paper are simply exquisite ; and do the highest credit to the taste and enterprise of the eminent publishing firm of Messrs. Baillière, Tindall & Cox.

The Story of Alchemy and the Beginnings of Chemistry.

By M. M. PATTISON MUIR, M.A. ; Fellow, and Prælector in Chemistry, of Gonville and Caius College, Cambridge. With 17 Illustrations. London : George Newnes, Ltd. 1902. Pp. 185.

THIS extremely interesting and well-written little volume—the work of a past-master of the special department of science, which has formed the pursuit of his life—cannot fail to attract the attention of all of our readers who delight to study the growth of human knowledge and the history of human opinion. The doctrines of such pioneers as the (semi-) mythological Hermes Trismegistus of Geber, of Basil Valentine, of Paracelsus, and of Van Helmont, prepared the way for making straight the pathways of modern chemistry ; and although their methods of operation and modes of thinking are far too tortuous for modern journalistic criticism, we cordially recommend Mr. Pattison Muir's booklet to all readers who are interested in the early growth and development of a most interesting study.

Diseases of the Heart : A Clinical Text-Book for the use of Students and Practitioners of Medicine. By E. H. COLBECK, B.A., M.D. Cantab. ; Physician to Out-Patients at the City of London Hospital for Diseases of the Chest, &c. With 43 Illustrations. London : Methuen & Co. 1901. Pp. 341.

A WORK on Medicine may be written from either of two stand-points. A man may, out of the fulness of his experience, write a work based largely on his clinical observations and on the views which have gradually matured through a series of years ; or else he may write a work, logical, clear, and well put together, which is founded in considerable degree on the instruction which he has acquired from other observers

and from the literature of the subject. The work before us belongs, in our opinion, mainly to the second of these classes. It is well arranged, and the explanations and descriptions are written in well-chosen words; but it seems to us to lack somewhat that air of individuality which is necessary before a book can become, as it were, a trusted adviser to assist us when we find ourselves in difficulties.

The sections on the symptoms and physical signs of the various heart lesions and the explanation of their pathological effects form the best part of the work. Any student or practitioner who studies these sections will acquire a very competent knowledge of cardiac disease. Controversial matter has been almost wholly excluded: thus in the chapter on mitral narrowing no reference is made to the theory that the crescendo murmur is due to a regurgitant current of blood, a view which has recently been urged by several observers.

The book is illustrated with well-chosen diagrams representing the anatomy of the heart, pulse tracings, &c.

Obstinate Hiccough. The Physiology, Pathology, and Treatment, based on a Collection of over One Hundred and Fifty Cases from British and Foreign Works. By L. F. B. KNUTHSEN, M.D. Edin. London: J. & A. Churchill. 1902. 8vo. Pp. ix + 169.

As we take up our pen to review this monograph we recall to memory two masterly and classical papers on Hiccough written by Irish physicians. Both papers were published in the DUBLIN JOURNAL OF MEDICAL SCIENCE, and we are glad to see that Dr. Knuthsen generously and frankly acknowledges his indebtedness to their authors.

At a meeting of the Medical Society of the King and Queen's College of Physicians in Ireland on Wednesday, November 16, 1881, Dr. Arthur Wynne Foot detailed the clinical history of a lad aged 15 years, whom he had been called to see on April 9 of the same year. The patient had been hiccoughing incessantly, except when asleep, for twenty-two weeks since November 5, 1880.

Of the second paper Dr. Knuthsen says (page 138)—“By

far the best comment on hiccough—the most scholarly and classical article—is to be found in the DUBLIN JOURNAL OF MEDICAL SCIENCE, June, 1893, by W. Langford Symes. In all my investigations this article easily stands out pre-eminent, and I am indebted to the author for following out his lines in my own reasonings, and for culling paragraphs from his excellent treatise." Dr. Knuthsen then quotes Dr. Langford Symes's case at considerable length.

The volume before us consists of a preliminary note on the etymology and meaning of the term "Hiccough," of a case observed by the author in a gentleman aged 43 years, and of six chapters or "Sections." The subject-matter of each of these sections is as follows:—Section I., British cases from current medical journals; Section II., Foreign cases from current foreign journals; Section III., Cases noted by writers of text-books on Medicine and so on; Section IV., Extracts of cases from various reviews; Section V., The anatomy, physiology and pathology of hiccough; and Section VI., Treatment, with a truly formidable list of the drugs and methods which have proved successful in the management of the affection.

It will be seen from this analysis of the contents of the book that it constitutes a very mine of information on the topic with which it deals. On this account it is valuable. But the clinical history of the fatal case reported by the author is even more interesting. The victim, in the autumn of 1896, had a sudden hæmoptysis followed by physical signs of right apical pulmonary tuberculosis. He was sent to Davos-Platz, where he spent the following two winters, returning to England in the Spring of 1899 "cured." He wintered at Falmouth in the season of 1899–1900. In March, 1900, he consulted Dr. Knuthsen for symptoms of dyspepsia and torpid liver. Late in the month of April he left for London, comparatively well. All through the following summer he felt low and depressed from worry connected with the winding up of his business in London. He was treated for a stomach attack in the autumn, and was passed as sound so far as his lungs were concerned. After his arrival for the second time at Falmouth he consulted Dr. Knuthsen, on October 26, 1900, for flatulence and costiveness. On November 4, while

feeling well, he began to hiccough. At 6 p.m. on December 1 he sank almost suddenly into a state of coma and died fifteen hours later, his hiccough continuing up to within eight hours of his death. There was no autopsy. Dr. Knuthsen calculates that during the month the attack lasted the patient must have hiccoughed no less than 480,000 times.

A Handbook of the Open-Air Treatment and Life in an Open-Air Sanatorium. Second Edition. By DRs. CHARLES REINHARDT and DAVID THOMSON. London: John Bale, Sons & Danielsson, Ltd. 8vo. Pp. xvi + 176.

THE open-air treatment of phthisis has, we believe, a great future before it, and whatever means may be adopted in these countries to cure and stamp out the disease the open-air treatment will of necessity form an important factor of it. This being so we gladly welcome Dr. Reinhardt's book, the object of which, as he tells us, is "to familiarise the reader with the details of life in a sanatorium, to give an approximate idea of the results that may be expected, and the cost that must be incurred." The idea still appears to persist in the minds of the public that consumption is an incurable disease, and that the only chance that a person has of prolonging his life when attacked by consumption is the adoption of a more or less permanent residence in some foreign country. In the pages of this book the error of these ideas is very clearly pointed out, and the description of the life that one must lead while undergoing the treatment, though truthful and accurate in detail, is very attractive, and devoid of many of those unpleasant features which are generally supposed to be essential to it. As regards the results that have been obtained in the British sanatoria, the statistics are most satisfactory. In incipient cases cures are obtained in from 80 to 90 per cent., in comparatively advanced cases 50 per cent. are cured, while 35 per cent. of all the cases taken together regain normal health. The book is profusely illustrated with pictures of the different British sanatoria, while a more or less detailed account of twenty-nine of these is given in the text. For those seeking information as to where they may go, or what they are to expect while undergoing the open-air treatment,

this handbook will afford a most excellent guide, and we can heartily advise any medical man to place it in the hands of any patient he may be recommending to undergo this treatment. We trust that the book will have a large circulation among the general public, for the information it contains will do much to dissipate those erroneous views on the subject of phthisis, the prevalence of which makes the progress of the anti-tuberculosis campaign so slow in these countries.

The Edinburgh Medical School Calendar and Guide to Students, 1902-3. Edinburgh: E. & S. Livingstone. 1902.

WE have been favoured with the twenty-third annual issue of this very useful little manual. It contains in a convenient form all the details of the Medical Department of the University of Edinburgh, of the Colleges of Surgeons and Physicians, and of the Triple Qualification of the last-named bodies, in conjunction with the Faculty of Physicians and Surgeons of Glasgow. Full particulars are given also of the various medical schools, hospitals, &c., including (p. 46 *et seq.*) a long list of extra-academical teachers whose lectures, &c., qualify for graduation in Edinburgh University. About one-half, or rather less, of the book is thus occupied, while the remainder, about 165 pp., is devoted to specimens of examination questions—preliminary, professional, D.P.H., &c.

The advantage to a medical student of being thus able to obtain in one volume, at the extremely moderate cost of two shillings, all the information which is scattered through the Calendar of the University, the Regulations of the Royal Colleges, and those of the various Hospitals, &c., is self-evident.

It is neatly got up—well printed, on good paper. We noticed an occasional slip on the part of the proof-reader, and also that the objectionable American method of spelling such words as gynecology with “e” instead of “æ” has been adopted.

PART III.

SPECIAL REPORTS.

REPORT ON DISEASES OF CHILDREN.

By W. LANGFORD SYMES, M.D., F.R.C.P.I.

I.—ENTERIC FEVER IN CHILDHOOD.

DR. BLACKADER, of Montreal, contributed recently an interesting paper to the American Pediatric Society on an analysis of 100 cases of enteric fever in children under 15 years of age.

4 cases occurred under 2 years.

13 " " between 2 and 5 years.

40 " " " 5 " 10 "

43 " " " 10 " 15 "

	CASES.		CASES.
Enlarged spleen—		Abdominal Tenderness -	15
Palpable,	70	Restlessness -	15
On percussion,	8 } 78	Relapse, or Recrudescence in -	15
*Headache -	68	Chilliness (not Rigor) -	12
*Constipation -	59	*Drowsiness -	12
Rose Spots -	55	Albuminuria -	5
*Anorexia -	49	Semi-stupor -	4
*Tympanites -	48	Blood in Stools -	4
*Loose Motions -	36	Paretic Bladder -	3
Abdominal Pain -	33	Erythematous Rash -	2
*Epistaxis -	23	Carphology & Delirium	1
Systolic Heart murmurs		Convulsions (from in-	
(apical and basal) -	22	judicious feeding,	
*Vertigo -	19	aged 2 years 8	
Bronchial Signs -	19	months) -	1
Vomiting -	18	Death -	1
Mild Nocturnal Delirium	18		

Those marked (*) are described as "well recognised initial symptoms," the remainder developing during the course of the disease.

The various symptoms fell into the following order of importance and frequency :—

Widal reaction positive in 96 per cent. of those cases in which it was sought—i.e., 46 cases examined showing positive reaction in 43, and negative in 3. These cases were dated as follows :—

From 1st to 8th day ..	12 cases reacted.
„ 8th to 12th „ ..	13 „ „
„ 12th to 18th „ ..	12 „ „
„ 18th to 28th „ ..	6 „ „

Treatment.—The treatment recommended, and here pursued, was :—

Cool baths (never “ cold ”), beginning at 95° and cooled down on each successive bath to 80° or 75° ; never cooled by adding cold water ; each bath 10 minutes. Chief effect to be desired is as a sedative to the nervous system, and never given as an antipyretic.

Systematic spongings at 70°.

Cold applications or ice to the head, and to the heart if excited.

Cold wet packs.

Stimulants freely as a food, especially whisky and brandy.

Cardiac stimulant, preferably strychnin.

Aperients if required, chiefly a glycerine and water enema, or small doses of calomel.

No antipyretics.

Hot applications to the feet.

Cool applications to the trunk.

Cold applications to the head.

— An excellent plan was wrapping the patient in warm, moist gauze, and then fanning it.

Ice cream was sometimes of great value in feeding difficulties.

Cold baths should never be given to young children, as the shock is intense, and a much larger extent of surface is exposed proportionately to body weight than in adults. The cool baths reacted favourably on the nervous system, on the secretions, and nutrition, and they are held to be a positively useful measure.

II.—THE PANCREATIC DIGESTION OF CASEIN.

In the 12th Vol. of the Transactions of the American Pediatric Society, Dr. B. K. Rachford contributes an able paper, with experiments, on the pancreatic digestion of casein. The experiments were made with rabbits' pancreatic juice, filtered rabbit bile, and ordinary dairy milk boiled and neutralised. At the close of each experiment the undigested casein was coagulated, filtered, dried, and weighed, and the amount of peptones estimated. Various ingredients were tested:—Maltose prepared by one of Liebig's foods subjected to the action of diastase, limewater, sodium carbonate, hydrochloric acid, and bile.

1. *Influence of Maltose.*—It is shown that the pancreatic digestion of casein was in every instance slightly facilitated by the presence of a maltose solution, and that a milk sugar solution seemed to exercise the same beneficial influence. Pancreatic juice, therefore, in the presence of bile, is somewhat assisted in casein proteolysis by the presence of a maltose or milk sugar solution. In a previous paper (*American Journal of Physiology*, Vol. II.; No. 5), Dr. Rachford demonstrated the fact that acid proteids undergoing digestion will slightly increase the diastatic action of rabbits' pancreatic juice. The inference, therefore, may be drawn that both the diastatic and proteolytic action of rabbits' pancreatic juice goes on more rapidly when the juice is acting in a mixture of starches and albumens than when acting on either alone.

Jacobi long since taught that in health milk digestion goes on more satisfactorily when mixed with a decoction of cereals, and many recent writers agree with Jacobi that with these diluents the rennet and hydrochloric acid of the stomach precipitate the casein in more flocculent clots, and enable the ferments to come into closer contact with the casein.

It must, however, be well diluted, and used cautiously. In any event we may infer that the effect of these malted cereal diluents on casein digestion is continued after the milk reaches the intestine and comes under the influence of the various enzymes of the pancreatic juice.

This action of maltose is not as powerful as that of either limewater or sodium carbonate.

2. *Influence of Limewater.*—Dr. Rachford's experiments also indicate that limewater slightly increases the proteolytic action of rabbits' pancreatic juice on casein. Limewater has long had an empirical reputation, perhaps due in part to the fact that the action of rennet is facilitated by the presence of salts of lime. But it has also some value in neutralising the acidity which usually develops in dairy milk before reaching the consumer, and facilitating the flaky deposit of casein in the stomach.

3. *Influence of Sodium Carbonate.*—It is shown that the presence of sodium carbonate greatly increases the proteolytic action of rabbits' pancreatic juice on casein. The good, however, that comes from sodium carbonate in infant feeding is probably due to the fact that it neutralises the fermentation acids which have been formed in the milk.

4. *Influence of Hydrochloric Acid.*—The few experiments in this table demonstrate that combined HCl slightly retards the proteolytic action of trypsin on casein. The retarding influence, however, was not very great for some considerable proteolysis was accomplished by the pancreatic juice when 1 minim of dilute HCl was added to 15 cc. of milk.

5. *Influence of Bile and Combined Hydrochloric Acid.*—A long series of experiments under this heading shows that bile not only neutralises the retarding influence of combined HCl on the pancreatic digestion of casein, but that by its presence it enables the pancreatic juice to do more work on acid casein than it could do on neutral casein, or on neutral casein mixed with bile. That is to say, bile assists the pancreatic juice in the digestion of casein; but it renders even greater assistance when the casein is partly saturated with HCl.

This table shows that the addition of a small percentage of HCl almost invariably increases the proteolytic action of pancreatic juice on casein when the juice is acting in the presence of bile.

The milk after being subjected in the stomach to the influence of rennet, HCl, and pepsin, is discharged partially digested through the pylorus into the duodenum; the casein being either wholly or partly saturated with HCl is brought

at once under the influence of a mixture of bile and pancreatic juice, and these conditions being favourable to the pancreatic digestion of casein, proteolysis will rapidly go on.

This fact has some bearing on the feeding of sick infants. HCl is one of the most valuable agents we have in the treatment of feeble digestion in infants. It is especially useful where malnutrition is pronounced and HCl in gastric juice deficient. Also in cases where curds are seen in the stools. Here a pepsin and HCl solution is of great benefit. At the same time it exercises a restraining influence on lactic acid and other organic fermentations.

III. MORTALITY AND DURATION OF PNEUMONIA IN CHILDREN.

Mortality.—D. J. P. Barber recently read a paper before the Minnesota Medical Society on "Pneumonia in Children." He points out that the writers of text-books derive their experience chiefly from hospital and consulting practice, and, therefore, fail to see the disease in its milder forms. Holt's statistics are stated to reveal a mortality of 65.5 per cent. of all cases seen in hospitals, and 49.5 per cent. of uncomplicated cases of broncho-pneumonia. Pepper is quoted as giving a mortality of 30 to 40 per cent. Dr. Barber holds that broncho-pneumonia in private has no such mortality, and with his conclusions most physicians will agree.* He produces records of 165 cases of pneumonia in children under 5 years of age, seen in private, which are summarised as follows:—

Pneumonia in children, 165 cases:—

Broncho-pneumonia, 148 cases, 12 deaths = 8.1 per cent.

Lobar pneumonia 17 „ 1 death

Of 148 cases of broncho-pneumonia there were:—

Uncomplicated 131 cases, 5 deaths = 3.7 per cent.

Complicated 17 „ 7 „ = 41 „

* In justice to Holt, however, we would point out that he is very clear on this point. He says:—"In private practice the mortality from broncho-pneumonia is from 10 to 30 per cent. One whose knowledge of broncho-pneumonia is derived from private practice, can, however, form but little idea of the frequency and severity of this disease in hospitals and asylums for infants and young children, particularly when it occurs with epidemics of measles, diphtheria, and pertussis."—*Cf.* "Diseases of Infancy and Childhood," by EMERIT HOLT, M.D., LL.D. 1903. P. 551.

The complications were as follows :—

Whooping cough	10 cases	5 deaths.
Measles	5 „	1 death
Enteric fever	2 „	1 „

Duration.—The duration of broncho-pneumonia in children as seen in private is shorter than the text-books lead one to believe. The accompanying table shows the duration of 148 cases of broncho-pneumonia, 114 of which (77 per cent.) ended before the tenth day, and of these only three died.

TABLE I.—*Duration of Broncho-Pneumonia.*

Days Duration	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total Cases
Under 1 year ..	—	2	5	12	3	4	1	3	1	2	1	3	4	2	2	2	—	—	—	—	—	—	—	—	—	—	—	47
1 to 2 years ..	2	10	10	7	6	1	5	2	—	—	—	1	—	3	—	—	1	—	—	—	—	—	—	—	—	—	—	48
2 to 3 „ ..	2	9	3	7	2	—	2	—	2	—	—	1	—	1	—	1	—	1	—	—	—	—	—	—	—	—	—	30
3 to 4 „ ..	—	6	4	2	2	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15
4 to 5 „ ..	—	2	2	2	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	8
Total cases ..	4	29	24	30	13	6	8	5	4	2	1	5	4	7	2	3	1	—	—	—	—	—	—	—	—	—	—	148

Climate is believed to be one of the factors which contributes largely to the low death-rate and short duration in that State, for the disease runs a more favourable course in elevated situations and dry atmospheres than it does in the seaboard towns.

INSANITY.

THE January number of the *Westminster Review* contained, amongst a number of good articles, a remarkable one on insanity. The facts brought to light by the article are so appalling that the first question suggested to the reader must be whether something cannot be done to arrest the spread of the disease. The special feature of the *Review*—viz., the sections on contemporary literature, including those on science, philosophy and theology, sociology, politics, travels, belles lettres, history and biography, &c.—are well worth reading.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF PATHOLOGY.

President—E. J. McWEENEY, M.D.

Sectional Secretary—A. H. WHITE, F.R.C.S.I.

Friday, December 5, 1902.

THE PRESIDENT in the Chair.

Sarcoma of the Left Suprarenal Capsule.

DR. EARL showed a case of this disease with secondary growth in the thorax, involving the right lung, the pericardium, and right auricle, and causing narrowing and thrombosis of the superior vena cava.

THE PRESIDENT wished to know whether the material found inside the superior vena cava was in the nature of a thrombus, and if so whether Dr. Earl regarded it as an embolus or as something which grew from the lung and auricle into and through the walls of the vein—*i.e.*, whether it was a thrombus due to loss of vitality or to growth of the tumour? He said it would be interesting to study the relations of the tumour to the walls of the vein and of the auricle, as to whether it infiltrated these structures or not.

DR. EARL, in replying, said that he looked upon the material as an ordinary thrombus, due to slowing of the circulation and infiltration of the vein walls. He made no microscopic examination of it, but it was partly white, partly red, and probably did not contain any tumour tissue.

Cancer of the Transverse Colon.

DRS. MAUNSELL and EARL showed this case. There was a small polypus in the neighbourhood of the tumour, which presented histological characters which appeared to indicate malignancy.

PROFESSOR O'SULLIVAN said he was inclined to regard the polypus as an adenomatous growth due to irritation of the malignant growth. He had seen a case in which there was a row of these lying round the cancer.

THE PRESIDENT said it would be interesting to find two malignant tumours existing independently of each other, for example in the bowel. If he had seen the specimen without previous knowledge of it he would have thought it more than a simple tumour. He thought it was a cancer of the bowel in its very initial stage.

DR. EARL, in replying, agreed that if it was malignant it was a very early stage. Dr. O'Sullivan had mentioned a case in which there was a ring of these growths round a cancer, and said that he considered them innocent, but he might as well have considered them malignant if they had a structure similar to that which he now showed. He said that two independent malignant processes did sometimes occur—there might be a cancerous tumour on one wall of the œsophagus, and another on the other wall, with healthy tissue between. The question of the changes of cells was of most importance in connection with curetings of the uterus. Though the structure of the mucous membrane of the intestine was not the same as that of the uterus, the same general laws held good.

Dropsy of the Gall-Bladder.

DR. EARL showed a case due to obstruction of the cystic duct by a gall-stone.

Intraocular Tumour.

MR. ARTHUR BENSON read the notes of a case which occurred in the left eye of a child, aged three. Six months before admission to St. Mark's Ophthalmic Hospital, the creamy white reflex from the pupil was noticed, but there was no pain apparently. On admission the cornea and lens were perfectly clear, the iris was discoloured and vascular, with numerous vessels visible on its surface. The vitreous chamber was completely filled by a creamy coloured tumour, which had moulded itself against the posterior surface of the lens. The tension of the eye was + 2; this, added

to the appearances, made the diagnosis of pseudo-glioma very improbable, whilst the age of the child was against sarcoma of the choroid, so that glioma of the retina was the most probable diagnosis. Enucleation was done and the globe examined by Dr. Neville, who reported as follows :—" On microscopical examination the tumour shows the characters of a round-celled sarcoma, of a markedly cylindromatous type. The tumour cells form well-marked sheaths for many of the vessels, in the neighbourhood of which the cells are both larger and stain better than they do outside the range of immediate nutritive supply. There are areas of hæmorrhage, and also semi-necrosis, where nuclei stain feebly, and scattered through the mass are many areas of calcification, some smaller vessels having completely calcareous coats. Examined unstained the cells do not show any abnormal pigmentation. Mallory's glia-stain fails to show any gliomatous structure, and the sections so far made do not help to solve the question of the origin of the tumour. The remaining part of the tumour is being decalcified."

THE PRESIDENT fully agreed in not giving the name glioma to the tumour. In most of these cases of intraocular tumour springing from the retina, the characteristic spider cells were not seen, even in staining by the Golgi method. True glioma of the retina was very rare. He had heard of a case of a child, aged four, who was attacked by this disease in both eyes, and from each of them there was a tumour projecting as large as a closed fist of an adult.

DR. EARL could not agree with Drs. McWeeney and Neville in calling these growths sarcomata. They could be traced to the retina itself, and our ordinary view of sarcomata was that they were connective tissue growths, while there was very little of this tissue in the retina. Again, in ordinary glioma of the brain the spider cells were not found with any readiness, and the growths there also frequently resembled sarcomata. He considered neuro-epithelioma the best term for such tumours as Mr. Benson showed.

PROFESSOR O'SULLIVAN said that the tumour seemed to consist of two parts, one surrounding the vessels and consisting of large cells, and the other consisting of small round cells corresponding in appearance to those found in what is called glioma of the retina. He did not see why these tumours should be called gliomata, considering they were derived from the inner molecular layer of the retina. The different characters of the two parts of this tumour seemed to him to make the diagnosis unusually complicated and difficult.

THE PRESIDENT said there were certainly two kinds of cells of different sizes in the tumour, one with large nuclei packed close together and little protoplasm, the other with very small nuclei and no protoplasm. The nomenclature of these tumours was very unsatisfactory. There were two standpoints from which to consider them, the morphological and the histogenetic. Morphologically these tumours were to be classed with small, round-celled sarcomata. Histogenetically they might belong to the epithelial class of tumours. Whether they originated from epiblastic sources was open to discussion. Supposing those cells were of epithelial origin, morphologically they did not resemble epitheliomata; they were sarcomata.

The Section then adjourned

SECTION OF SURGERY.

President—L. H. ORMSBY, P.R.C.S.I.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, December 12, 1902.

THE PRESIDENT in the Chair.

Cystic Tumour of the Brain.

MR. E. H. TAYLOR read a paper on cystic tumour of the brain. The patient, a man, aged thirty-two, had enjoyed good health up to March, 1901. Subsequent to this date he began to experience progressive weakness in his left lower extremity, which extended upwards so as to involve his arm and his face, also on the left side to some extent. Sensation was somewhat dulled on the paralysed side. There had never been any convulsive attack or giddiness. The classical symptoms of intracranial pressure were very marked—viz., optic neuritis with progressively failing sight, frequent and paroxysmal headache and vomiting. The diagnosis made was that of a subcortical tumour in the right cerebral hemisphere and in the vicinity of the motor area. Operation was performed on April 26th, 1902. A large omega-shaped flap, 3 ins. by 3 ins., was raised, including the scalp and the subjacent bone; two-thirds of the flap lay in front, one-third behind, the line indicating the fissure of Rolando, or the sulcus centralis. In the process of elevating the bone a number of small trephine holes were made and the intervening bridges of bone divided with Gigli's saws. The dura when exposed was very tense and did not pulsate. On dividing the membrane and turning it aside, the brain bulged into the opening in an alarming fashion. No tumour

was visible or could be felt ; fluctuation, however, was very evident quite close to the brain surface. An incision made through the cortex permitted the escape of a quantity of clear, straw-coloured fluid, the result being that the brain instantly collapsed and receded very considerably from the inner aspect of the cranium. A sterilised soft rubber tube, introduced into the cavity for drainage purposes, could be pushed easily in different directions, revealing a cavity of some magnitude. The bone flap and dura mater were replaced, and the tube brought out through one of the trephine holes at the posterior margin of the flap. Meningeal hæmorrhage caused some trouble and delayed the concluding steps of the operation. Patient bore the operation well. There was temporary paralysis in the left arm for some time afterwards ; however, the after-course of events has been satisfactory ; the left lower extremity has recovered its power, so also has the upper extremity. The patient is able to perform his regular work as well as usual, and has never had any symptoms of headache or vomiting since the operation. His sight has also improved. An interesting feature of the case is that more than three months ago a slight convulsive seizure occurred in the left arm, suggestive of the onset of Jacksonian epilepsy ; for this the patient was put on fairly large doses of bromide of potassium. His general health is excellent at present, and according to his own statement he has never been better ; his vision too, has improved. The last observation as to the patient's condition was made on November 28th, seven months after the operation.

MR. MAUNSELL said that he thought that the fracturing of the base of the bone flap was not right. It would be better if it were first nearly sawn through with a Gigli saw.

SIR THOMAS MYLES in a case of glioma had found the introduction of the Gigli saw very difficult ; it had, however, the merit of causing little or no bleeding. Sir Thomas explained why Mr. Maunsell's method was not applicable. He thought it was impossible to make a differential diagnosis between a cystic tumour and a glioma.

DR. HAUGHTON said that if the centre of motor disturbance was located it might have been better to make a small trephine hole over the tumour, introduce a small needle and ascertain if it were a fluid tumour. This method would not cause much brain disturbance and would give the necessary information.

THE PRESIDENT detailed a case of abscess of the brain he had recently operated on with good results.

MR. E. H. TAYLOR said his own experience was that the bone breaks cleanly across. If a spicule did appear it could easily be snipped off with a forceps. The difficulties in brain tumours were three in number. 1. Diagnosis. 2. In what part is a tumour situated? 3. Is it capable of being removed? With regard to the trephine holes, he said if he were doing the operation again he would just make two and make vertical sections on each side with the forceps. With regard to anatomical measurements he said he thought it desirable to define approximately the underlying portions of the cortex. He found a depressed fracture situated near the motor area. He did not approve Dr. Haughton's plan of trephining a small hole and putting in a small syringe.

Two Unusual Cases of Nephrectomy.

MR. R. C. B. MAUNSELL read a paper on two unusual cases of nephrectomy. The first case was that of a female infant of sixteen months, from whom he removed a congenital cystic kidney which weighed 3 lbs. 2 ozs. and measured 22 by 16 ins. in circumference. The child made an uneventful recovery. Mr. Maunsell advocated ether as the anæsthetic for children, and gave his reasons for choosing an oblique incision commencing at the eighteenth intercostal space and sloping to the middle line below the umbilicus, the sheath of the rectus being opened without cutting the muscle fibres. The second case was one of pyonephrosis, complicated by subphrenic abscess following occlusion of the ureter. Mr. Maunsell treated it by Ollier's subcapsular nephrectomy, and gave reasons for this choice. The pathology of the cystic kidney was then discussed and it seemed to support the theory of an origin in foetal papillitis.

MR. TAYLOR thought the subcapsular method of securing the kidney very useful in some cases.

MR. LENTAIGNE said that he had found the subcapsular method of operation very easy in a case of tuberculous kidney without perinephritis. He related a case in which he had drained both kidneys for calculous pyelitis with complete success.

MR. GORDON said that in these congenital cystic kidneys the affection was bilateral, and one would fear that the second kidney might become inefficient. He considered the incision from tip of the last rib towards the sheath of the rectus a very good one.

DR. WAYLAND said that as regarded anæsthetics for children he agreed with Mr. Maunsell that ether is better than chloroform.

There were only two drawbacks to ether: 1.—It was more unpleasant; 2, there was a liability to accumulation of mucus. Both these were only temporary, and the second one ceased soon after commencement of operation.

MR. MAUNSELL, in replying, said that the reason he performed nephrectomy in this case was that he knew the history of the case, and that there was no chance of the ureter becoming pervious. Besides, the patient was moribund from cancer. He thought the subcapsular should be the primary operation in such a case, as the pedicle could be got at in case of hæmorrhage. He said he always gave ether to children, even in removing tonsils and adenoids.

The Section then adjourned.

SECTION OF MEDICINE.

President—A. V. MACAN, M.B., P.R.C.P.I.

Sectional Secretary—R. TRAVERS SMITH, M.D.

Friday, December 19, 1902.

DR. WALTER G. SMITH in the Chair.

The Finsen Treatment for Lupus.

DR. C. M. O'BRIEN read a paper based on his experiences of a year's trial of this method. He exhibited a number of patients already subjected to the method, and gave short, descriptive histories. The cases presented great variety in extent, character, and duration, which varied from two to twenty-eight years. The cure of some and improvement of all attended his efforts, while the cure of others appeared to him to be merely a matter of time. As regards permanency of cure he was of the opinion that the method was entitled to a premier place in this respect. This opinion he formed from personal examination of many cases at the Finsen Institute, Copenhagen, that were cured, and remained so from one to six years. He gave a demonstration of the lamp and its method of application, and said that most of the objections hitherto complained of in the use of the French lamp as compared with the Finsen lamp could be obviated by prolonging the duration of each sitting, while at the same time increasing the intensity of the light. The reactions were in all cases better, and penetration to the deeper tissues more manifest.

THE CHAIRMAN said that, as regarded test of cure, naked eye

inspection was not sufficient. His method was to press blood away from the part with a watch glass, and see whether any of certain characteristic brown nodules were still left in the skin. There were different methods of treatment: 1. Excision. He thought that this, combined with careful suturing, gave good results in suitable cases. 2. Caustic treatment, which he did not consider a good one. 3. Radiant energy treatment, of which the Finsen light was a form. The Finsen rays might be defined as filtered light, as only the violet end of the spectrum is used. The action of the light was conditioned by the body on which it fell. In the therapeutic contrast between Finsen rays and X-rays, the latter appeared to have a much more stimulant effect on nutrition of skin than the Finsen rays. The X-rays will promote growth of hair, but if pushed too far will produce a depilatory effect.

SIR GEORGE DUFFEY said that in the Royal City of Dublin Hospital they had used the Finsen light since April last, and had had a number of cases which were more or less successful. As regarded cosmetic effect it seemed to be extremely useful in some cases; in other cases the disease was entirely arrested. He had used certain applications in conjunction with the light treatment when the disease was spread over too large a surface for the lamp to cover at once, such as a weak ointment made with pyrogallic acid. He had sittings of fifteen minutes, and even this he sometimes found too long. Some cases reacted more than others. The scar left was more pliable and softer than that resulting from any other treatment.

DR. WATSON said he had treated about twenty cases of skin disease with X-rays. He used the ordinary apparatus, covering up all the sound tissues with lead foil. It was mostly used in those cases of lupus which had refused operation, but those cases which had been previously scraped reacted quicker and better.

DR. KIRKPATRICK had seen a good many cases of lupus treated by scraping, and he thought the reason that this treatment had fallen into disrepute was that patients expected to be cured by one operation, whereas it needed frequent repetition.

DR. O'BRIEN, in replying, said that a surgeon could not completely remove the disease. The light treatment would cure completely if it were given sufficient time. As regarded the difference between X-rays and Finsen light, the ultra-violet rays were supposed to be bactericidal. With regard to applications. Finsen used a 9 per cent. pyrogallic acid ointment along with the

light, to give better transmission with beneficial results. His experience was that fifteen minutes' sitting gave scarcely any reaction, and he had prolonged sittings to an hour and ten minutes.

Paroxysmal Tachycardia.

DR. JOSEPH O'CARROLL recorded a case which came under his notice in the Whitworth Hospital, Dublin, in July, 1901. The patient was a governess, unmarried, aged thirty-four, who fourteen years previously began to suffer from attacks of violent sub-sternal pain accompanied by rapid cardiac action. These attacks, occasional at first, gradually grew more frequent, till in 1900 they had increased to about five per week. In duration they varied from a few minutes to a few hours. Their onset was preceded by dimness of vision, sometimes amounting to almost complete blindness. Tachycardia was a constant accompaniment of the pain, the heart's rate on some occasions reaching 260 beats per minute. An attack would end by a brief but violent exacerbation of pain and a subjective sensation of something shifting from left to right in the thorax. Many lines of treatment were tried in vain, till finally Dr. O'Carroll administered bromide in gradually increasing doses, when, *post hoc* or *propter hoc*, the paroxysms of pain and heart hurry improved so much that it is now six months since the last attack. The author suggested the possibility of this case being one of "visceral epilepsy."

The Section then adjourned.

THE SOCIETY OF MEDICAL PHONOGRAPHERS.

THIS Society will hold its next Annual Shorthand Examination early in May, 1903. Two prizes will be offered, each of the value of £3, one for first-year students and one for students of more than one year's standing. The competition will be open to any Registered Medical Student in the United Kingdom who has not taken a first prize at one of the Society's previous examinations. It will be held simultaneously in London, Edinburgh, Dublin, and at any provincial medical centre in the United Kingdom at which a candidate or candidates shall offer themselves. There is no entrance fee for the examination. Intending candidates should send in their names as early as possible to Dr. P. G. Griffith, Bonhams, Farnborough, Hants., who will furnish them in return with a detailed Prospectus of the Examination. The latest date for receiving entries will be April 15th, 1903.

THE RAINFALL OF IRELAND.*

By HUGH ROBERT MILL, D.Sc., LL.D., F.R.S.E.

IN order to determine the true mean annual rainfall of any region it is necessary to have uniform, continuous, and prolonged observations at a large number of well-distributed stations.

It is now possible for the first time to give a fairly satisfactory account of Irish rainfall, though the observing stations at work are only one for every 170 square miles as compared with one for every 20 square miles in England. The number of stations in Ireland has increased from 83 in 1874 to 190 in 1901, an increase of 140 per cent. ; while the number of stations in England and Wales increased only by 120 per cent., and in Scotland only by 32 per cent., in the same period. In 1874 there was not a single record of rainfall from the Counties of Clare, Kildare, Leitrim, Limerick, Longford, or Monaghan ; now there is at least one rain record from every county. The number of stations is still far too small, especially in Connaught ; and after the stimulus of the British Association in Belfast produced its effect in 1875 the number in Ulster has ceased to grow.

Province	No. of Rain Stations in 1874	No. in 1875	No. in 1901
Ulster	30	55	56
Connaught	10	15	22
Leinster	26	31	62
Munster	17	28	50
Ireland	83	129	190

While 1,400 additional stations would be necessary to place Ireland on the same footing as an equal area of England, only 185 additional observers are required to give the same number of rain-gauges per thousand of population.

Perfect records for the ten years 1890-99 exist for 108 stations in Ireland, and by computation thirty-one additional records can

* Read in Section G of the British Association for the Advancement of Science at the meeting held in Belfast, 1902.

be made available. Of these, twenty records are perfect for the thirty years 1870–99, and fifty-seven records of somewhat shorter duration can be computed with reasonable accuracy. The distribution is not satisfactory, the western half of the country and all the mountainous districts being very poorly represented. Maps have been constructed, however, which give a better representation of Irish rainfall than anything previously compiled.

The map for the thirty years 1870–99 may be taken as showing the true mean fall so far as the limited number of stations makes it possible to do so. There are only three small areas with a fall exceeding 50 inches per annum in the west of Kerry, of Mayo and Galway, and of Donegal respectively. Possibly some parts of the eastern mountains may also have a fall exceeding 50 inches. More than 40 inches falls over the whole of Ireland west of the Foyle and the Shannon, and to the west and south of a line drawn from Limerick through Mallow to Clonmel, whence a narrow belt, equally wet, runs north-eastward through the Counties of Waterford, Wexford, and Wicklow. Two small areas with more than 40 inches occur in the mountains of the south-east of Co. Down and the east of Co. Antrim. All the rest of Ireland has between 30 and 40 inches of rain, except parts of Co. Dublin and Co. Meath, where the fall averages a little less than 30 inches. The following table gives a rough approximation to the areas of the different zones of rainfall :—

Under 30 inches (average 29 in.)	.	.	700 square miles.
From 30 to 40 inches (average 35·5 in.)	.	.	13,200 „
From 40 to 50 inches (average 44 in.)	.	.	13,50 „
Above 50 inches average 60 in.)	.	.	5,200 „
			<hr/>
Ireland	.	.	32,600

This gives an average of 42 inches for the whole country—a figure which, although by no means certain, is probably not very far from the truth.

The variations of rainfall in Ireland are less than those in England. Thus for the ten years 1890–99 the rainfall over Ireland was only 2 per cent. below the thirty years' average; that over England and Wales showed a deficiency of 7 per cent.^a The average rainfall of the ten years was practically the same as that of the thirty years in Central Ireland, a trifle above the average in the north-west, and a little below the average round the north, east, and south coasts.

^a See *British Rainfall*, 1901, p. 24.

It is to be hoped that existing rainfall stations will be kept up and new ones established in all parts of the country, so that there may be a basis for the accurate measurement of the average quantity of water available for inland navigation, town supply and for power.

Rainfall Averages for Thirty Years, 1870-99.

Place	1870-79	1880-89	1890-99	1870-99
	in.	in.	in.	in.
Portlaw, Mayfield, Co. Waterford	41·65	43·31	42·18	42·38
Glenam, Clonmel „ .	43·47	42·15	40·89	42·17
New Ross, Longraigue, Co. Wexford	43·57	39·29	38·75	40·54
Enniscorthy, Ballyhyland „ .	44·36	42·80	41·45	42·87
Gorey, Courtown House „ .	38·14	35·39	33·62	35·72
Inistioge, Woodstock, Co. Kilkenny	46·64	41·67	38·50	42·27
Bray, Fassaroe, Co. Wicklow .	38·70	43·28	39·68	40·55
Carlow, Browne's Hill, Co. Carlow .	36·09	33·59	33·65	34·44
Dublin, Fitzwilliam-square, Dublin	28·47	27·47	27·30	27·75
Athlone, Twyford, Co. Westmeath	40·47	38·97	35·83	38·42
Ballinasloe, Co. Galway . . .	38·89	35·66	36·58	37·04
Tuam, Gardenfield (6 ft), Co. Galway	38·43	42·76	41·85	41·01
Belturbet, Redhills, Co. Cavan .	36·57	34·57	34·42	35·19
Armagh Observatory, Co. Armagh	30·95	32·16	30·97	31·36
Seaforde, Co. Down	41·67	37·89	36·27	38·61
Banbridge, Milltown, Co. Down .	32·75	31·44	30·23	31·47
Waringstown „ .	34·03	33·02	34·14	33·73
Belfast, Queen's College, Co. Antrim	34·92	32·77	32·00	33·23
„ Antrim-road „	33·86	34·57	35·28	34·57
Omagh, Edenfel, Co. Tyrone .	37·25	36·63	39·66	37·85

THE PHYSICAL ASPECTS OF A THEORY OF COLOUR VISION.

IN Section A of the British Association, at the meeting held in Belfast in September, 1902, F. W. EDRIDGE-GREEN, M.D., F.R.C.S., read a paper, of which the following is an abstract :—

The view which I wish to bring forward is that each optic nerve fibre is able to convey impulses corresponding to all kinds of light ; that is to say, a very similar condition exists in the impulses which are transmitted along the optic nerve to that which is accepted for waves of light previous to their entering the eye. The limitation of the number of colour sensations was thought to be necessary because it seemed physically impossible that a single fibre of the optic nerve could convey all waves of light. The facts of colour vision can only be satisfactorily explained on the assumption that each optic nerve fibre does convey impulses corresponding to all waves of light. It occurred to me that if there were a transforming apparatus in the eye we could explain the facts. The telephone shows how this may be accomplished in the case of sound. I saw that the retina was constructed in a manner theoretically perfect from this point of view. The percipient layer of the retina is made up of two kinds of elements—the rods and the cones. The portion of the retina corresponding to the central portion of the field of vision contains only cones. External to this spot the cones are arranged with one or more rings of rods round them, the single ring being round those cones which are nearest to the central portion. In the rods there is a rose-coloured substance, the visual purple, which is very sensitive to light. This photo-chemical substance is found exclusively in the rods. I assumed that light falling upon the eye liberated the visual purple from the rods, just as heat would an ointment, and a photograph is formed. The decomposition of the visual purple by light chemically stimulates the ends of the cones, and a visual impulse is set up, which is conveyed through the optic nerve fibres to the brain. I have examined the retinas of several monkeys after they had been kept in a dark room, and found that the visual purple was to be seen in the yellow spot, but situated between, and not in, the cones. This view gives a reason for a great many facts which were previously inexplicable. For instance, a bright light may fall upon the fovea (the centre of the yellow spot) without producing any

sensation, and a perceptible interval elapses before we are able to see with the yellow spot, after the remainder of the retina, the fovea being the last point to convey a sensation of light. The first fact we should expect, the cones being insensitive to light; the second corresponds to the diffusion into the yellow spot of the visual purple. All the facts of colour mixing, contrast, and after-images can be explained by the hypothesis that the visual purple is the visual substance. A positive rose-coloured after-image can be obtained after white light or any spectral colour. The ordinary explanation of this—namely, that the action of the hypothetical red and violet fibres persists longer than those for green—cannot be true, because it is exceedingly difficult to obtain this after-image after spectral red, and very easy to see it after green. It would be against the whole principle of the theory that the red fibres should be excited most efficiently by green. But if we assume that the visual purple is the visual substance, then we have an easy explanation of the facts.

The fibres of the optic nerve pass to the visual centre. I have assumed that the visual centre transmits to the mind impressions of white light, and that by it objects are seen monochromatically, as in a photograph. The visual centre is, therefore, acted upon by impulses caused by all rays of light, the colour-perceiving centre being concerned with the quality of the impulse within the power of perceiving differences possessed by that centre, or portions of that centre.

I will now apply this theory to colour-blindness, and it will be seen that it gives a simple explanation of the facts.

Cases of colour-blindness may be divided into two classes, which are quite separate and distinct from each other, though both may be present in the same person. In the first class there is light as well as colour loss. In the second class the perception of light is the same as the normal sighted, but there is a defect in the perception of colour. In the first class certain rays are either not perceived at all or very imperfectly. Both these classes are represented by analogous conditions in the perception of sounds. The first class of the colour-blind is represented by those who are unable to hear very high or very low notes. The second class of the colour-blind is represented by those who possess what is commonly called a defective musical ear. Colour-blind individuals belonging to this class can be arranged in a series. At one end of this series are the normal sighted, and at the other the totally colour-blind. The colours appear at the points of greatest differ-

ence, and I have classified the colour-blind in accordance with the number of colours which they see in the spectrum. If the normal sighted be designated hexachromic, those who see five colours may be called pentachromic ; those who see four, tetrachromic ; those who see three, trichromic ; those who see two, dichromic ; and the totally colour-blind, monochromic. There are many degrees included in the dichromic class. There may or may not be a neutral band, and this is widest in those cases approaching most nearly to total colour-blindness. I have recorded a case of a patient who was colour-blind with one eye. It is an interesting fact that for form vision the colour-blind eye was much the better of the two, and he could recognise fine lines in the spectrum with this eye which were not visible to the other. He saw the two ends of the spectrum tinged with colour and the remainder grey. It will be noticed that his colour sensations were limited to the extreme red and the extreme violet—namely, those colours which present the greatest physical contrast to each other. Neither the red nor the violet appeared of the nature of a primary colour, but gave the impression that they were largely diluted with grey. A theory of colour vision must account for a case of this kind and also for the other varieties and degrees of colour-blindness. The trichromic are a very important class, and any theory must account for the fact that they see yellow as red-green and blue as violet-green. As we should theoretically expect, when there is shortening of the spectrum the centres of the colours are moved towards the unshortened side.

I will conclude by showing how this theory will explain the trichromatism of normal colour vision. It also explains why certain persons see spectral yellow as red-green and spectral blue as green-violet. In past ages all saw the rainbow made up of only three colours, red, green, and violet. When a new colour appeared between the red and green (yellow) it is obvious that a mixture of red and green would give rise, not to red-green, but to the colour which had replaced it—namely, yellow.

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS.

For four weeks ending Saturday, January 3, 1903.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending January 3, 1903, in the Dublin Registration Area and the twenty-one principal provincial urban districts of Ireland was 28·9 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,401. The deaths registered in each of the four weeks ended Saturday, January 3, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Dec. 13	Dec. 20	Dec. 27	Jan. 3			Dec. 13	Dec. 20	Dec. 27	Jan. 3	
22 Town Districts	25·8	27·8	21·9	28·9	26·1	Lisburn -	18·2	18·2	18·2	18·2	18·2
Armagh -	34·4	6·9	27·5	20·6	22·4	Londonderry	16·6	21·8	11·5	26·9	19·4
Ballymena	14·4	4·8	14·4	19·2	13·2	Lurgan -	8·9	26·6	18·3	26·6	18·9
Belfast -	26·2	25·6	21·7	28·6	25·5	Newry -	33·6	25·2	21·0	46·2	31·5
Clonmel -	15·4	10·3	51·3	5·1	20·5	Newtownards	5·7	34·3	11·4	17·2	17·2
Cork -	12·3	26·7	20·5	39·0	24·6	Portadown	10·3	10·3	25·8	20·7	16·8
Drogheda -	45·0	40·9	49·0	40·9	43·9	Queenstown	18·2	26·4	18·2	0·0	13·2
Dublin (Reg. Area)	29·2	30·8	24·6	29·5	28·5	Sligo -	19·2	4·8	19·2	19·2	15·6
Dundalk -	19·9	31·9	27·9	12·0	22·9	Tralee -	21·1	26·4	5·3	10·6	15·9
Galway -	42·7	38·8	23·3	38·8	35·9	Waterford	11·7	35·1	7·8	21·4	19·0
Kilkenny -	29·5	14·7	19·7	29·5	23·4	Wexford -	28·0	46·7	9·3	23·3	26·8
Limerick -	47·8	41·0	19·1	41·0	37·2						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, January 3, were equal to an annual rate of 4·0 per 1,000, the rates varying from 0·0 in eleven of the districts to 13·3 in Lurgan—the 6 deaths from all causes registered in that district including one from whooping-cough, one from diphtheria, and one from diarrhoea. Among the 197 deaths from all causes in Belfast are 30 from measles, 2 from scarlet fever, 2 from whooping-cough, 3 from diphtheria, one from enteric fever, and 2 from diarrhoea. The 30 deaths in Limerick include 8 from measles and one from enteric fever.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this Area is 378,766; that of the City being 293,394, Rathmines 33,208, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,380.

In the Dublin Registration Area the births registered during the week ended Saturday, January 3, amounted to 267—152 boys and 115 girls; and the deaths to 224—114 males and 110 females.

DEATHS.

The registered deaths represent an annual rate of mortality of 30·8 in every 1,000 of the population. Omitting the deaths (numbering 10) of persons admitted into public institutions from localities outside the Area, the rate was 29·5 per 1,000. During the fifty-three weeks ending with Saturday, January 3, the death-rate averaged 25·3, and was 1·1 below the mean rate for the corresponding portions of the ten years 1892–1901.

There were 9 deaths from measles—in the preceding 4 weeks the deaths registered were respectively 9, 10, 9, and 7. Deaths from scarlet fever numbered 4. Influenza caused 6 deaths diphtheria 4 deaths, typhus, whooping-cough, and enteric fever each one death. There were 3 deaths from *diarrhoea*.

Of 37 deaths from tuberculous diseases, tuberculous phthisis caused 2 deaths, and *phthisis* 22 deaths; tuberculous meningitis caused 3 deaths, tuberculous peritonitis one death, and 7 deaths were due to other forms of the disease.

Three deaths were registered from carcinoma, 2 deaths from sarcoma, and 6 deaths as due to *malignant disease* ("cancer").

There were 15 deaths from diseases of the nervous system, including 7 deaths of children under 5 years of age from *convulsions*.

Diseases of the heart and blood-vessels caused 22 deaths.

Deaths from diseases of the respiratory organs rose from 42 in the preceding week to 51—a number which is equal to an annual rate of 7·0 per 1,000 of the population of the Dublin Registration Area. The annual rate for the fifty-second week of the past 10 years was 7·4 per 1,000. In the above total, 34 deaths from bronchitis, 6 deaths from broncho-pneumonia, one death from croupous pneumonia, and 7 deaths from *pneumonia*, are included.

There were 5 deaths from accidental violence.

In 17 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 11 children under 5 years of age, and the deaths of 4 persons aged 60 years and upwards.

Fifty-eight of the persons whose deaths were registered were under 5 years of age (37 being infants under one year, of whom 10 were under one month old) and 63 were aged 60 years and upwards, including 26 persons aged 70 and upwards, of whom 8 were octogenarians, and 4 (a man and 3 women) were stated to have been aged 100, 98, 92, and 90 years respectively.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN DUBLIN.

(1.) CASES OF INFECTIOUS DISEASES NOTIFIED TO THE PUBLIC HEALTH COMMITTEE OF THE CORPORATION.

Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of infectious diseases in the City of Dublin notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending December	6, 1902,	..	..	162 cases.
"	13,	"	..	191 cases.
"	20,	"	..	174 cases.
"	27,	"	..	136 cases.
"	January 3, 1903,	..	..	119 cases.

Of the 119 cases notified in the week ended January 3, 13 were

erysipelas, 29 enteric fever, 43 scarlatina, 10 diphtheria, 18 measles, 3 "continued fever," one typhus fever, and 2 "fever."

(2) CASES OF INFECTIOUS DISEASE IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious disease in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	December	6, 1902,	..	..	8 cases.
"	"	13, "	..	..	12 cases.
"	"	20, "	..	..	12 cases.
"	"	27, "	..	..	4 cases.
"	January	3, 1903,	..	..	4 cases.

Of the 4 cases notified in the last week, 3 were scarlet fever and one was diphtheria.

(3.) CASES OF INFECTIOUS DISEASE IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council has furnished information regarding the number of cases of infectious disease in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	December	6,	1902,	..	..	12 cases.
"	"	13,	"	..	..	6 cases.
"	"	20,	"	..	..	4 cases.
"	"	27,	"	..	..	9 cases.
"	January	3,	1903,	..	..	7 cases

Of the 7 cases notified in the last week, 4 were measles, 2 were scarlet fever, and one was enteric fever.

(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ending Saturday, January 3, 1903, nine cases of measles were admitted to hospital, 12 patients were discharged, there were 4 deaths, and 55 cases remained under treatment at the close of the week.

Fourteen cases of enteric fever were admitted to hospital, 15 cases were discharged, there was one death, and 70 cases remained under treatment at the close of the week.

Thirty-three cases of scarlatina were admitted to hospital, 33 cases were discharged, there was one death, and 172 cases remained

under treatment at the close of the week. This number is exclusive of 27 convalescents from scarlatina who remained under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Three cases of typhus were admitted to hospital, 3 cases were discharged, there was one death, and 15 cases remained under treatment at the close of the week.

Thirteen cases of diphtheria were admitted to hospital, 5 were discharged, there was one death, and 5 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 4 cases of pneumonia were admitted to hospital, 3 patients were discharged, there was one death, and 15 cases remained under treatment at the end of the week.

One case of smallpox remained under treatment at the close of the week.

STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending December, 6, 1902,	..	..	76 cases.
" " 13, "	..	..	71 cases.
" " 20, "	..	..	55 cases.
" " 27, "	..	..	52 cases.
" January 3, 1903,	..	..	70 cases.

Of the 70 cases notified in the week ended January 3, 1903, 11 were enteric fever, 16 erysipelas, 8 diphtheria, 5 membranous croup, 5 "continued fever," 22 scarlet fever, and 3 were puerperal fever.

ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, January 3, 1903, in 76 large English towns, including London (in which the rate was 20·9), was equal to an average annual death-rate of 20·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·6 per 1,000, the rate for Glasgow being 23·3, and for Edinburgh 18·7.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N. Long., 6° 15' W., for the Month of December, 1902.

Mean Height of Barometer, - - -	29·991 inches.
Maximal Height of Barometer (4th, at 9 p.m.), -	30·533 „
Minimal Height of Barometer (29th, at 2 p.m.) -	28·871 „
Mean Dry-bulb Temperature, - - -	43·3°.
Mean Wet-bulb Temperature, - - -	41·1°.
Mean Dew-point Temperature, - - -	38·4°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·238 inch.
Mean Humidity, - - -	83·6 per cent.
Highest Temperature in Shade (on 17th) -	58·0°.
Lowest Temperature in Shade (on 7th), -	29·6°.
Lowest Temperature on Grass (Radiation) (7th)	23·5°.
Mean Amount of Cloud, - - -	72·8 per cent.
Rainfall (on 13 days), - - -	1·563 inches.
Greatest Daily Rainfall (on 14th), - -	·272 inch.
General Directions of Wind, - - -	W., S.E.

Remarks.

A very open month, although cold periods occurred between the 3rd and 8th in connection with an anticyclone, and from the 28th to the close in relation to a large and deep atmospheric depression, in which the barometer sank to 28·250 inches at Wick at 8 a.m. of the 29th. Three days earlier the barometer touched 27·96 inches in the centre of a very large and deep disturbance near St. Petersburg. During the anticyclonic period early in the month persistent and severe cold prevailed in eastern and central Europe. Even in England also there was some sharp freezing—the thermometer falling to 14° at Loughborough on the morning of the 7th. It was not until the 16th that a general thaw set in over Germany. Just before Christmas the weather was both genial and fine, but a stormy, rainy period set in on Christmas Day. In Dublin City the estimated duration of bright sunshine was 53½ hours, or a daily average of 1·72 hours.

In Dublin the arithmetical mean temperature (44·1°) was above the average (41·7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 43·3°. In the thirty-seven years ending with 1901, December was coldest in 1878 (M. T. = 32·8°), and in 1874 (M. T. = 36·8°); warmest in 1898 (M. T. = 47·6°), and in 1900 (M. T. = 47·1°).

The mean height of the barometer was 29·991 inches, or 0·116

inch above the corrected average value for December—namely, 29·875 inches. The mercury rose to 30·533 inches at 9 p.m. of the 4th, and fell to 28·871 inches at 2 p.m. of the 29th. The observed range of atmospheric pressure was, therefore, 1·662 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 43·3°, or 3·5° below the value for November, 1902. Using the formula, *Mean Temp.* = *Min.* + (*Max.* - *Min.* × ·52), the value was 44·2°, or 2·3° above the average mean temperature for December, calculated in the same way in the thirty years, 1871-1900, inclusive (41·9°). The arithmetical mean of the maximal and minimal readings was 44·1°, compared with a thirty years' average of 41·7°. On the 17th the thermometer in the screen rose to 58·0°—wind, S.; on the 7th the temperature fell to 29·6°—wind, S.E. The minimum on the grass was 23·5°, also on the 7th. There was frost in the screen on 3 days, and 9 days of frost on the grass were recorded.

The rainfall was 1·563 inches, distributed over 13 days. The average rainfall for December in the thirty-five years, 1866-1900, was 2·390 inches, and the average number of rainy days was 18. The rainfall, therefore, and also the rainy days were much below the average. In 1876 the rainfall in December was very large—7·566 inches on 22 days. In 1868 (which was otherwise a fine and dry year), 4·749 inches fell on as many as 27 days. On the other hand, in 1867, only ·771 inch was measured on 13 days; in 1885, only ·742 inch on 10 days; in 1892, only ·795 inch on 10 days; and in 1871, only ·797 inch on 15 days. In 1901, 1·989 inches of rain fell on 23 days.

A lunar halo was seen on the 13th. High winds were noted on as many as 19 days, and attained the force of a gale on seven occasions—the 1st, 14th, 16th, 25th, 27th, 28th, and 30th. The atmosphere was more or less foggy in Dublin on the 2nd, 3rd, and 7th. Snow or sleet fell on the 28th and 29th.

The rainfall in Dublin during 1902 amounted to 29·375 inches on 203 days, compared with 26·075 inches on 179 days in 1901, 34·338 inches on 216 days in 1900, 27·737 inches on 186 days in 1899, 27·048 inches on 194 days in 1898, 29·344 inches on 211 days in 1897, 26·901 inches on 194 days in 1896, 31·242 inches on 194 days in 1895, 29·261 inches on 209 days in 1894, only 20·493 inches on 174 days in 1893, 25·644 inches on 196 days

in 1892, only 16·601 inches on 160 days in 1887, and a thirty-five years' average of 27·770 inches on 198 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 2·920 inches on only 11 days. Of this quantity ·950 inch fell the 1st, and ·530 inch on the 16th. From January 1st to December 31st, 1901, rain fell at Knockdolian on 168 days, to the total amount of 40·021 inches. The corresponding figures for 1894 were 38·776 inches on 184 days; 1895, 35·135 inches on 174 days; 1896, 36·102 inches on 169 days; 1897, 42·885 inches on 210 days; 1898, 30·546 inches on 171 days; 1899, 36·690 inches on 182 days; 1900, 42·716 inches on 191 days; and 1901, 34·750 inches on 167 days.

Dr. B. H. Steede reports that at the National Hospital for Consumption at Newcastle, Co. Wicklow, rain fell on only 9 days, but to the considerable amount of 2·499 inches, ·563 inch being measured on the 1st, ·530 inch on the 14th, and ·568 inch (the maximum) on the 15th. The highest shade temperature was 57·2° on the 17th., the lowest was 30·5° on the 7th. At 9 p.m. of the 16th the thermometer stood at 57·0° in the open air. The rainfall for the year 1902 at this Station of the Second Order was 37·792 inches, distributed over 181 days. These figures compare with 40·193 inches on 194 days in 1897, 33·140 inches on 174 days in 1898, 34·699 inches on 174 days in 1899, 37·256 inches on 188 days in 1900, and 31·931 inches on 181 days in 1901.

The rainfall at Cloneevin, Killiney, was 2·08 inches on 14 days. The maximal fall in 24 hours was ·55 inch on the 1st. The average December rainfall of the 17 years (1885–1901) was 2·442 inches on 17·7 days.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 16 days to the amount of 2·36 inches, ·46 inch being measured on the 1st. Temperature ranged from 56° on the 13th, 14th, and 16th to 29·0° on the 7th and 8th. The mean shade temperature was 42·8° Fahrenheit.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall was 4·760 inches on 20 days, compared with 9·413 inches on 26 days in December, 1899, 7·810 inches on 27 days in 1900, and 7·667 inches on 20 days in 1901. On the 15th 1·20 inches fell.

In the City of Cork the rainfall was 3·06 inches on 20 days, the maximal fall in 24 hours being ·66 inch on the 15th.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain

fell in December to the amount of 1·618 inches on 15 days. The amount of bright sunshine was 40·9 hours, the largest daily number of hours being 6·5 on the 2nd.

Dr. J. Byrne Power, F. R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, Co. Dublin, reports that the mean temperature at that health resort was 44·5°, being 0·3° below the average for December during the previous four years. The extremes were—highest, 58·0° on the 16th; lowest, 33·5° on the 29th. The mean temperature at Portland Bill, situate about midway between Torquay and Ventnor, Isle of Wight, was 42·7°, the extremes being—highest, 53° on the 14th; lowest, 25° on the 7th. The mean daily range of temperature was 5·6° at Kingstown; at Portland it was 6·9°. The average sea temperature at Sandycove Bathing Place was 47·4°. The rainfall at Kingstown for the month amounted to 1·59 inches on 13 days; at Portland it was 1·53 inches on 14 days. The mean humidity of the air was 81 per cent. The duration of bright sunshine was 39·6 hours, whereas it was 40·9 hours at the Ordnance Survey Office, Phoenix Park, 37·9 at Parsonstown, 17·6 at Valentia, 18·8 at Southport, and 39·6 hours at Eastbourne.

The total rainfall at Kingstown for the year 1902 amounted to 30·14 inches on 175 days, being 1·31 inches above the average for 12 years (1873–1880 and 1898–1901). The greatest monthly rainfall was in September, amounting to 4·23 inches, and on the 3rd of that month 2·83 inches fell in 24 hours, being the greatest daily rainfall of which there is a record at Kingstown. The annual mean temperature was 50·3°, being 0·2° below the average for 12 years (1873–1880 and 1898–1901). The total duration of bright sunshine during the year was 1,377 hours, whereas at the Ordnance Survey Office, Phoenix Park, it was 1,452 hours, and at Eastbourne it was 1,683·0 hours.

RAINFALL IN 1902

*At 40 Fitzwilliam-square, West, Dublin.**Rain Gauge:—Diameter of Funnel, 8 in. Height of top—Above ground, 1 ft. 4 in. ; above sea level, 50 ft.*

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which .01 or more fell
	Inches	Depth	Date	
January, -	1·614	·692	10th	12
February, -	1·748	·918	26th	10
March, -	1·752	·366	24th	21
April, -	2·061	·597	4th	16
May, -	2·798	·619	30th	22
June, -	2·371	·738	19th	17
July, -	3·163	1·342	25th	17
August, -	2·949	·924	6th	18
September, -	2·969	* 2·075	2nd	16
October, -	3·056	·809	4th	23
November, -	3·331	·880	6th	18
December, -	1·563	·272	14th	13
Total, -	29·375	—	—	203

The rainfall was 29·375 inches, or 1·605 inches in excess of the average annual measurement of the thirty-five years, 1866–1900, inclusive—viz., 27·770 inches.

It is to be remembered that the rainfall in 1887 was very exceptionally small—16·601 inches—the only approach to this measurement in Dublin being in 1870, when only 20·859 inches fell; in 1884, when the measurement was 20·467 inches; and in 1893, with its rainfall of 20·493 inches. In nine of the thirty-five years in question the rainfall was less than 26 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32·966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. In 1900 the rainfall was 34·338 inches, or 6·568 inches in excess of the average of the thirty-five years, 1866–1900. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1900—namely, in 1872, when 35·566 inches fell on 238 days, and in 1880, when 34·512 inches were measured on, however, only 188 days.

In 1902 there were 203 rainy days, or days upon which not less than .005 inch of rain (five-thousandths of an inch) was

* Maximum.

measured. This was 5 above the average number of rainy days, which was 198, in the thirty-five years, 1866–1900, inclusive. In 1868 and 1887—the warm, dry years of recent times—the rainy days were only 160, and in 1870 they were only 145.

In 1902 the rainfall in 24 hours, from 9 a.m. to 9 a.m., only twice exceeded one inch—namely, on July 25th (1·342 inches) and September 2 (2·075 inches). In 1892 the daily rainfall twice exceeded 1 inch—viz., May 28th (2·056 inches) and August 16th (1·310 inches). On no occasion in 1893 did one inch of rain fall on a given day in Dublin. In 1894 falls of upwards of an inch of rain in 24 hours were recorded on 4 occasions—viz., May 15th (1·330 inches); July 24th (1·560 inches); August 25th (1·369 inches); and October 23rd (1·042 inches). In 1895, 1·802 inches fell on January 12th; 1·014 inches on July 24th; and 1·256 inches on July 25th. In 1896, 1·563 inches fell on July 8th; 2·020 inches on July 24th; and 1·388 inches on December 8th. In 1897, 1·166 inches fell on September 1st. In 1898, on November 23rd, 1·732 inches were measured. In 1899, the rainfall exceeded one inch on 4 occasions—namely, July 11th (1·402 inches); August 5th (2·227 inches); September 30th (1·042 inches); and December 28th (1·129 inches). In 1900, as in 1899, the rainfall exceeded one inch on 4 occasions—namely, July 27th (1·783 inches); August 2nd (2·135 inches); November 6th (1·103 inches); and November 27th (1·126 inches). In 1901, the rainfall only once exceeded one inch, but on that occasion (November 11th) the measurement was 2·037 inches. The excessive rainfall on September 2, 1902, is noteworthy—it amounted to 2·075 inches in Dublin (Fitzwilliam-square). It was the eighth occasion only since 1865—that is, in 37 years—upon which 2 inches have been measured in Dublin at 9 a.m. as the product of the preceding 24 hours' precipitation. The previous excessive falls were—August 13th, 1874 (2·482 inches); October 27th, 1880 (2·736 inches); May 28th, 1892 (2·056 inches); July 24th, 1896 (2·020 inches); August 5th, 1899 (2·227 inches); August 2nd, 1900 (2·135 inches), and November 11th, 1901 (2·037 inches).

Included in the 203 rainy days in 1902 are 13 on which snow or sleet fell, and 21 on which there was hail. In January hail was observed on 1 day, in February on 1 day, in March on 5 days, in April on 3 days, in May on 6 days, in August on 1 day, in October on 2 days, and in November on 2 days. Snow or sleet fell on 4 days in January, 2 days in February, 3 days in March, 1 day

in both April and November, and 2 days in December. Thunderstorms occurred once in May and once in June. Lightning was seen once in June, twice in August, and once in November.

The rainfall in the first six months was 12·344 inches on 98 days. The rainfall exceeded 3 inches in July (3·163), October (3·056), and November (3·331).

The rainfall was distributed as follows:—5·114 inches fell on 43 days in the first quarter, 7·230 inches on 55 days in the second, 9·081 inches on 51 days in the third, 7·950 inches on 54 days in the fourth, and last, quarter.

More or less fog prevailed on 51 occasions—6 in January, 10 in February, 6 in March, 5 in April, 1 in June, 4 in August, 8 in September, 2 in October, 6 in November, and 3 in December. High winds were noted on 126 days—13 in January, 6 in February, 10 in March, 12 in April, 7 in May, 5 in June, 10 in July, 4 in August, 6 in September, 14 in October, 20 in November, and 19 in December. The high winds amounted to gales (force 7 or upwards, according to the Beaufort scale) on 26 occasions—3 in January, 3 in February, 1 in March, 2 in April, 1 in May, 3 in July, 2 in September, 1 in October, 3 in November, and 7 in December.

Solar halos were seen on 17 occasions, lunar halos on 6.

Mr. Robert O'Brien Furlong, M.A., C.B., writes:—

The rainfall at Cloneevin, Killiney, for the year 1902 amounted to 32·26 inches on 192 days. As in 1901, the highest monthly fall was in September, when 4·18 inches were measured on 13 days, of which 2·81 inches fell on the 2nd.

The greatest number of days in any month on which rain fell was 21 in March and also in May.

The month of the least rainfall was March, with 1·50 inches on 21 days.

The heaviest fall in 24 hours was 2·81 inches on September 2nd. This is the greatest amount so far measured at this station in 24 hours—the next highest being 2·06 inches on November 23rd, 1898.

The average yearly fall during 17 years (1885–1901) was 27·86 inches on 182 days. The rainfall of 1902 was 4·40 inches, and the number of days on which rain fell was 10, in excess of this average. Snow and sleet or hail were noticed on 8 days.

Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1902.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min.	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevailing Winds
January	55.6	3rd	26.9	30th	47.5	38.5	1.614	12	30.117	30.897	31st	28.958	1st	W., S.W.
February	54.4	28th	22.0	12th	43.5	35.0	1.748	10	29.815	30.825	1st	28.950	26th	S.S.E., W.
March	58.7	17th	32.8	24th	52.5	40.9	1.752	21	29.785	30.196	16th	28.847	24th	W., S.W.
April	61.7	24th	33.0	10th	53.7	40.4	2.061	16	29.919	30.340	29th	29.112	22nd	N.E., N.W.
May	67.9	24th	36.0	7th	56.4	43.4	2.798	22	30.023	30.503	25th	29.224	17th	N., W.N.W.
June	74.7	25th	42.1	10th	62.7	50.6	2.371	17	29.893	30.213	24th	29.190	20th	N.E., S.E.
July	74.3	13th	45.1	21st	65.8	53.3	3.163	17	30.027	30.240	5th	29.194	26th	N.W., W.
August	71.2	18th	44.8	4th and 11th	64.4	52.3	2.949	18	29.908	30.225	1st	29.496	18th	N.W., N.E., W.
September	69.0	22nd	41.6	18th	62.2	50.0	2.969	13	30.042	30.504	28th	29.141	3rd	N.E., W.
October	61.5	12th	40.3	17th	56.1	47.2	3.056	23	29.974	30.410	23rd	29.180	15th	E.N.E., W.N.W., S.W.
November	58.9	1st	35.2	27th	52.1	42.8	3.331	18	29.746	30.287	2nd	29.060	8th	S.E., W.
December	58.0	17th	29.6	7th	47.9	40.2	1.563	13	29.991	30.533	4th	28.871	29th	W., S.E.
Extremes, Totals, and Means	74.8	July 18th	22.0	Feb. 12th	55.4	44.6	29.375	Days 203	29.937	30.897	Jan. 31st	28.847	Mar. 24th	W., N.E.

JOHN WILLIAM MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.;

PERISCOPE.

THE RATIONAL TREATMENT OF HAY FEVER.

In the *Laryngoscope* for August, 1902, Dr. G. B. Hope has an article on this subject. In the course of his remarks he says that there are three imperative connecting links in the chain of hay fever—viz., the predisposing constitutional or neurotic state; the exciting irritant cause of whatever nature—whether pollen dust, or atmospheric conditions, prevalent at a certain season; and thirdly, some physical alteration of the intra-nasal structure. In some cases, he says, the treatment of enlarged inferior turbinals, the removal of spurs and septal deviations, has brought about a great diminution of symptoms, if not a complete cure; but in the majority of cases the results are not so satisfactory, and little real relief has been experienced. In these cases he would have us turn our attention to the middle turbinal, whose structure and function differ materially from that of the inferior, forming as it does a large part of the ethmoid bone, covered with a very delicate and highly sensitive mucous membrane, and lying in a narrow space bounded by unyielding walls, where on the slightest swelling it is subject to considerable pressure. He then goes on to mention the relationship of asthma and vaso-motor derangements to hay fever, and recites shortly the early views held as to the causation, which may be briefly summed up in the saying of Morel Mackenzie, "That pollen is the essential factor in the case of those who possess the peculiar predisposition." He concludes his paper by quoting some cases where relief was obtained by removal of the anterior end of the middle turbinal, and shows that by this simple procedure alleviation at least may be hoped for in some of these most distressing cases.

REPORT OF A CASE IN WHICH LARYNGEAL SYMPTOMS COMPLICATED PURPURA HÆMORRHAGICA.

DR. JOSEPH T. GIBBS reports in the Proceedings of the American Laryngological, Rhinological, and Otological Society, as reported in the *Laryngoscope* for September, 1902, a case in which laryngeal symptoms complicated purpura hæmorrhagica. The patient was a man of forty-two, who had been well up to three weeks before admission to Hospital on Nov. 3, 1901. At that time he had been vaccinated, and ten days later the legs became swollen and a

hæmorrhagic rash appeared upon them. About this time there was a bloody discharge from the bowel. There were subsequently crops of hæmorrhagic spots, and eventually the urine became bloody. On Dec. 29 Dr. Gibbs had first seen him, because of an attack of dyspnœa and crowing respiration that had existed for 36 hours. The entire larynx was red; the breath-sounds were weak, and there was marked laryngeal stenosis. On the following day after vomiting much chocolate-coloured mucus, the breath-sounds became nearly normal and the larynx then showed less infiltration, and the surface of the mucous membrane was covered with fluid blood. An application of cocain and adrenalin gave marked but temporary relief, the hæmorrhage recurring, and the patient dying the next day of exhaustion. Evidently the dyspnœa was due to hæmorrhagic œdema of the submucosa of the larynx, similar to the subcutaneous purpuric spots in simple cases. The relation of the illness to the vaccination was interesting, but by no means clear. The possible relation between the adrenalin and the last hæmorrhage was also worthy of consideration.

VERATRUM VIRIDE IN THE TREATMENT OF TETANUS.

H. B. SWEETSER (*North-Western Lancet*) reports the successful treatment of tetanus by tincture of veratrum viride. He wishes to emphasise the following points:—(1) To put on record a recovery from a severe and grave case of tetanus, under the administration of drugs, the ascertained physiological action of which is directly antagonistic to the action of the tetanus toxins, both poison and antidote affecting in opposite ways the same structures—the anterior horns of the spinal cord. (2) To call attention to the fact that chloral is a dangerous drug, which is even more liable to exert its poisonous effects when given during the course of so dangerous a disease than when given in health. (3) Some deaths ascribed to tetanus are really due to the effects of the remedies used.

TOTAL EXTIRPATION OF THE BLADDER AND ALL THE GENITAL ORGANS.

M. HOGGE reports (*Gaz. Heb. de M. et de Ch.*) the following case:—In the year 1896, he, through a hypogastric incision, ablated a voluminous papilloma from the base of the bladder. Recurrence took place, and in 1898 another operation was performed—Perineal incision, detachment of the bulb, prostate, seminal vesicles on one hand, of the rectum, of the anal sphincter on the other; symphyseotomy; separation of the pubis; detachment of the

perivesical peritoneum, and the seminal vesicles ; ligature of the lower ends of the ureters ; the removal in a mass of the bladder, prostate, vesicles, and external genitals ; suture of the pubis with silver, and cutaneous suture of the abdominal wall. The results were satisfactory. Three years later the patient is in a very fair condition. The kidneys are only moderately diseased, and urine escapes through a perineal fistula, the transplantation of the ureters into the rectum not being maintained.

THE CRUSADE AGAINST CONSUMPTION.

As a result of the enterprise of the Glasgow District Lunacy Board, on Tuesday, December 16, 1902, the Gartloch Sanatorium for Insane Consumptives, and on Thursday, December 18, the Sanatorium erected at Woodilee, Lenzie, for the same purpose, were formally opened. In both cases the principle of erection has been the same—namely, the provision of a comparatively inexpensive suite of buildings suitable for the open-air treatment of consumptive lunatics.

The General Lunacy Board for Scotland sanctioned the erection of these Sanatoria in June last, and within the brief space of 16 weeks the buildings were handed over to the Council ready for occupancy, the cost being about one-third that of a stone erection. So satisfied is the Board with the substantial and comfortable appearance and the promise of durability which these buildings present that they have recommended the Edinburgh District Board to adopt the Woodilee design as part of the scheme at Bangour Asylum extension. Dr. Fraser, one of the Commissioners of Lunacy, writing about these additions, said that the provision of a separate hospital for patients that were subject to an infective malady was a distinct advance in the treatment and classification of the insane, and the District Board were to be congratulated in being the pioneers in Scotland in such an important matter.

The buildings at Gartloch are situated on a sloping hill, facing the Asylum, and form one long stretch of about 400 feet. The general appearance of the buildings is pleasing, verandahs along the front giving a breezy effect to the exterior. The type of construction employed throughout is a new departure in the erection of Sanatoria. It is of a composite iron and wood character, on a system of air-spaced walls, patented by the designers of the buildings, Messrs. Speirs & Co., Glasgow. On each side of the central administrative double-story block stretch the patients'

dormitories and single rooms, which are large, airy, and of a liberal cubic capacity. An interesting feature of the method of construction is the interior covering, which is of a peculiar *papier maché* composition, and presents a surface like plaster, absolutely non-porous and jointless, and a perfect sanitary medium for disinfection. The various dormitories and rooms are heated with radiators and hot water pipes, and are lighted throughout with electricity. The sanitary appliances are ample.

The Woodilee Sanatorium, like Gartloch, was designed and erected by Messrs. Speirs & Co., Glasgow. The construction is similar, but the buildings in this case are pleasantly grouped over the site and erected in the Swiss chalet style. Accommodation has been provided in all for about one hundred and sixty patients, and the total cost approximates £100 per bed.

STRYCHNIN : EVIL OF OVERDOSAGE.

DR. R. G. CURTIN—(*Therapeutic Gazette*) writes :—Strychnin is a stimulant, and too much stimulation is followed by weakness from exhaustion. In chronic diseases of the heart in elderly persons he thinks it is decidedly injurious. He trusts to alcohol and digitalis—digitalis, because of its remote as well as its immediate effects ; alcohol, because in addition to its being a diffusible stimulant to the circulation, it is, in his opinion, a valuable tissue food. Strychnin fulfils neither of these important offices. It cannot be classed as a food, and it does not cause the slow, full, and ventricular contraction observed after the use of digitalis.

ESSENTIAL ANASARCA.

SIGNOR P. BACIALLI (*La Riforma Medica*) reports the case of a woman who became affected with anasarca after falling into cold water. There was hypophonesis of the respiratory apparatus without indication of any inflammatory process, and a slight increase in the size of the liver and of the spleen. There was no possibility of bacterial toxæmia in the case. The author holds that the sudden chilling and fright acted as a stimulus to the central and peripheral nervous system, inducing a double action—one on the small blood vessels, causing hyperæmia and a serous infiltration, and the other on the renal circulation, diminishing and almost suppressing the secretion of water and salts.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*Abnormal Deposits in the Joints.* By EDWARD H. BENNETT, M.D., F.R.C.S.I.; Professor of Surgery in the University of Dublin; Surgeon to Sir Patrick Dun's Hospital, Dublin.*

IN the year 1850 Professor Redfern, writing on the "Anormal Nutrition in the Human Articular Cartilages," describes the occurrence of carbonate of lime as a deposit in the cartilage of the heads of both humeri of a subject which presented "disease of nearly the whole articular cartilages in the body." The disease so generally distributed through the joints of this body was that so familiar to us in this city as chronic rheumatic arthritis.

In 1877 the Curator of the Pathological Museum of Vienna, Professor Heschl, addressed a letter to the Pathological Society of Dublin, asking for information with reference to the nature of a deposit which he had at that time observed in a case of chronic rheumatic arthritis, using, however, the term "arthritis deformans" as the name, then and now the German synonym for ours. He wrote:—"Some weeks ago I found in a case of arthritis deformans the articular cartilages of the knee and feet to present here

*Read before the Section of Pathology of the Royal Academy of Medicine in Ireland, on Friday, February 27th, 1903.

and there glistening points and spots of the irregular extension of the disease. They appeared on microscopical examination as round, and also as striped groups of crystalline needles resembling those which are described, and drawn, as the mixed urates found in the cartilages, or forming the gout nodes occurring in the true or English gout, but the chemical examination proved them to be not urates, but phosphates and carbonates. I know no one amongst our most experienced practitioners of Vienna who has ever seen the genuine English gout, and there does not exist a preparation of it in our Pathological Museum. Even our practitioners have declared that they did not attach much or any credit to the reports of these urates in gout.

"I certainly do not share such extreme and evidently erroneous opinions, but notwithstanding, I wish greatly to see one case of your peculiar gout, and consequently I solicit your assistance." I sent to Professor Heschl a specimen of true gout, over which he seems to have been enraptured, and I know that it is now carefully preserved in the Viennese Museum. In 1882 I found a specimen somewhat like that referred to above, which was composed of ammonio-magnesian phosphate with but little carbonate of lime. I now submit the most complete example of carbonate of lime deposit in joints that I have seen.

The subject was an aged male sent in from one of the Unions last summer for my class in operative surgery, and, of course, I can give no life history or any clinical details with reference to it. The chief point of interest in the case is the close resemblance to the naked eye which the deposit presents to that of true gout, of which it does not in reality show a trace.

The operations on which I was specially engaged when dealing with this body were the disarticulations of the limbs. In passing upwards from the distal joints of the extremities I noticed a very trivial amount of chronic rheumatic arthritis in the joints of the hands and feet, and in the knees and elbows. On the hip joint being opened, I was at once attracted by the white markings, and put the question to myself, can this be gout distributed in a mode exactly the reverse of the ordinary? I found in going into details as to distribution that the deposit was traced symmetrically in the

hips and shoulders, in the sterno-clavicular joints, and in the temporo-maxillary. There was none in the balls of the great toes, nor were there any tophi present in the pinnac of the ears, nor any white lines in the pyramids of the kidneys. That is to say, the positions occupied by the deposits were the very reverse of those in which one would meet them if the disease were gout. I tested them by the murexid test, which is readily applied in the dead body without special preparation. A tiny drop of fuming nitric acid placed on the articular cartilage, where it is marked with the deposit, and allowed to rest for a few moments, until it ceases to fume, will stain bright orange red when held over the unstopped mouth of a bottle of strong liquor ammoniæ. This experiment failed in this case. I did not rely on my own examination, either chemical or microscopical.

Professor Reynolds examined the deposit for me, and reports:—"Having cleansed your little specimen from fatty matter, which previously prevented attacks, I find that the granular material is easily acted on by hydrochloric acid, and evolves a very respectable amount of CO_2 gas as the granules dissolve. Therefore the substance is a carbonate. The solution in HCl when treated with excess of ammonia (to separate the inevitable phosphate) and filtered, gave a perfectly definite precipitate of calcium oxalate, therefore calcium is present in addition to that in the state of phosphate, so the granules consist of calcium carbonate or chalk." Professor O'Sullivan has examined the deposit for me microscopically, and has given me the mounted slides. Under low powers the substance appears as minute granular masses bedded in the tissue, but the granules viewed with an immersion lens, instead of being amorphous, are seen to be flat rhombic crystals very regular in form, but very minute. The deposit is, therefore, a crystalline chalk.

I submit to the Academy the original specimens, and with them a water colour drawing, taken while the colours of the tissues and of the deposit were unspoiled by the preservative fluids, formalin solution and subsequently spirit, which have kept them from decomposition, but have spoiled the contrast of colours seen in the recent specimens. As yet I have not seen anything to help us towards the clinical diagnosis of this rare disease.

ART. VIII.—*On Some Fatal Cases of Intestinal Obstruction.*^a

By WILLIAM TAYLOR, B.A., M.B. Dub. Univ., F.R.C.S.I. ; Surgeon to the Meath Hospital and County Dublin Infirmary ; Surgeon to Cork-street Hospital ; Member of Council and Demonstrator of Anatomy, Royal College of Surgeons, Ireland.

THE subject of my present communication is that of the fatal cases of intestinal obstruction it has fallen to my lot to operate upon in hospital since March, 1899. My object in selecting these fatal cases is that, in the first place, they were more interesting, and, in the second place, that they will serve better to direct attention to the lamentable results that must follow delay in undertaking the operative treatment of such conditions.

CASE I. was that of a boy, aged thirteen years, who came under my care on March 22. 1899. He was sent from one of the Unions in the County Dublin with the history that for twelve days prior to his despatch from the Union he had had no motion from the bowels, notwithstanding the free administration of purgatives and enemata. On admission the abdomen was greatly distended, and the outlines of the coils of intestines could be very easily seen. The boy, however, looked very well considering the history. The face was placid, and the pulse practically normal and of good volume ; the tongue was moist, but furred, and he had not vomited from the early morning. I saw him directly after admission, and he was then calmly eating an orange, which he refused to give up, and begged not to be put to bed. A consultation was held with the late Sir William Stokes and the late Mr. Patteson, both of whom recommended me to try enemata, and to give a dose of castor oil with 10 m of tinct. opii. The next day there was no improvement ; his condition was apparently just the same as on admission. The nurse, however, reported that at 5 a.m. he vomited a little brownish fluid, which contained two round worms. In spite of this I was again recommended to delay operating ; but on the next day—that is, the 24th of March—fourteen days after the onset, as there had not been any improvement, operation was agreed upon at a third consultation, and I opened the abdomen in the middle line below the umbilicus, assisted by the afore-

^aRead before the Members of the Dublin Biological Club, December, 1902.

mentioned gentlemen. The first thing noticed on incising the peritoneum was the escape of some gas, followed on enlarging the wound by the protrusion of some enormously distended coils of small intestine covered with extravasated fæces. The intestines were allowed to escape into warm towels, and it was then seen that the extravasated fæces were coming from a large rent in a coil of small intestine which was fixed at the brim of the pelvis. This was the obstructed loop, the cause of obstruction being a Meckel's diverticulum. The rupture of the swollen, softened gut was attributed to the violent way in which the boy struggled during the early period of the administration of the anæsthetic. The diverticulum which was attached to the ileum, about 14 inches from the ileo-cæcal valve, was cut off close to the ileum, and its cut edges were infolded and sewn up with a row of continuous Lembert sutures. The other end, which was attached just above and to the left of the sacro-vertebral angle, was freed and removed. The snared loop was meanwhile brought out of the abdomen, after which the damaged portion was removed, and its continuity restored by two rows of continuous sutures. Before this was done an enormous quantity of the contents of the intestines was poured out. The intestines were then washed with warm saline solution, as was also the abdominal cavity, and the intestines floated back on saline solution. The abdomen was rapidly closed, and the boy put back to bed. Strychnin was given freely, but death ensued about seven hours subsequently.

Were I now to meet with an exactly similar condition, on opening an abdomen I should simply tie two Paul's tubes into the divided ends of the ileum to drain the intestines, and postpone performing the anastomosis until the patient's condition would be more suitable for such a procedure.

CASE II. was that of a woman, sixty-six years of age, who was admitted on the night of the 15th July, 1900. She stated that for ten days prior to admission her bowels had not acted. She had got medicine from the dispensary doctor, but it had no effect. A Queen Victoria's Jubilee nurse gave her several injections, but without any result. Consequently, as the vomiting was becoming frequent and stercoraceous, she procured an admission for her, and brought her to hospital. I saw her immediately, and found the abdomen distended and hard. The hernial rings were examined, also the rectum, but with a negative result. As her

condition called for immediate interference, I had her brought to the theatre and prepared for operation. A small incision was made, and exploration with one finger for a moment only undertaken, but nothing being detected, a congested and distended coil of intestine was brought out, fixed and opened. This, I believed, would give her the best chance of recovery. A very small quantity of *fæces* escaped for the first two or three hours, but after this a large quantity was evacuated. However, she died some thirteen hours later. A *post-mortem* was made during the day, when a portion only of the circumference of the bowel was found snared at the obturator foramen, the afferent loop being acutely bent upon itself at this point, thus causing the complete obstruction. The enterostomy opening was 14 inches from the site of obstruction.

CASE III. was that of a young man of twenty-three years of age, who was admitted on the 8th November, 1900, complaining of sudden, severe abdominal pain of a paroxysmal nature. Vomiting took place almost immediately after the onset of the pain. His pulse, on admission, was of good volume, and 80 to the minute, while his temperature was 102°. As he gave the history of having been at his sister's wedding the night before admission, and of eating and drinking freely, and as nothing was to be detected on examining the abdomen, the House Surgeon ordered some hot fomentations to relieve his pain, and at the same time gave him some carminative mixture. From his admission about 9 or 10 p.m., I understood he did not vomit any until between 5 and 6 a.m. next morning. About 8 a.m. his bowels acted, the motion consisting almost entirely of dark fluid blood. When I saw him soon after, it was perfectly evident there was some severe peritoneal lesion present. The poor fellow was very restless, with sunken eyes and anxious expression; his pulse was fast and feeble, and he complained of great thirst as well as paroxysms of pain. The abdomen was rigid, but very little distended. Nothing of importance could be detected on palpation or percussion. Dr. Craig, who happened to arrive then, saw him with me, and agreed that operation should be done at once. The diagnosis made was that of intussusception. He was at once brought to the theatre, where, after free stimulation with strychnin hypodermically, and warm saline and brandy per rectum, the abdomen was opened through the middle line. A large intussusception, which turned out to be of the ileo-colic variety, was

found, and quickly reduced, but the mesenteric vessels seemed thrombosed, and after allowing warm saline solution to play freely over the loop for some minutes there was no apparent return of the circulation, the wall of the gut had lost its consistency, and it was evident that it would soon be quite gangrenous. The portion was then resected, and the ends brought together over a Murphy's button as the quickest method. The abdomen was filled with warm saline and hurriedly closed. Free stimulation was kept up, but the poor fellow died within an hour. The portion of gut removed measured 2 feet $4\frac{1}{2}$ inches.

CASE IV. was that of a woman, aged sixty-eight years, who was admitted in November, 1900. She stated that for eleven days before admission her bowels had not acted. When three days had passed by without a motion she took a dose of oil, but this having no effect she went to a doctor on the fifth day, who gave her a pill to take that night and a seidlitz powder to be taken next morning. As this did not act she was next given a mixture, which I subsequently found out from the doctor contained sulphate of sodium, but this merely sickened her stomach. Enemata were then resorted to, and castor oil poultices, but with the result that she was sent to the hospital on the 11th day of her obstruction. The abdomen was pretty well distended. She had a large inguinal hernia on the right side, which, however, presented a distinct impulse on coughing, and was not any more tense than one would suspect from the general distention of her abdomen. It could also be returned into the abdomen without any great trouble, but quickly descended again. There was no pain or tenderness in it. The vomiting was distressing and stercoraceous. The tongue was dry, and the pulse weak and thready. She was at once removed to the theatre, where, after the usual precautions, the abdomen was opened by a small incision under a little cocaine injection and a congested and distended coil of intestine got out. This I fixed with three or four joints of suture, after which it was opened and a Paul's tube tied in. A large quantity of fæces almost immediately escaped. An india-rubber tube was subsequently attached to the Paul's tube and brought underneath the clothes into a bucket placed under the bed. The stomach was washed out, and strychnin administered freely. Next morning the bucket was almost full of fæces, and the abdomen was quite flat and soft. She had not vomited, but her pulse was still feeble. Brandy and nourishment were freely given by mouth, and strychnin

nin hypodermically; but her condition never improved sufficiently to warrant any further operative measures, and she sank and died on the eighth day. *Post-mortem*.—No sign of peritonitis. Opening in gut $10\frac{1}{2}$ inches from ileo-cæcal valve. Obstruction due to an acute bending of ascending colon, apparently the result of the contraction of some bands of fibrous tissue produced by previous inflammatory trouble. A similar condition was found on the opposite side, causing an acute bending of the descending colon.

CASE V. was that of a woman, aged fifty-seven years, who was admitted under my care on the 11th of June, 1902. She was sent to hospital with a note stating that she had an abdominal tumour, associated with constipation and vomiting, and that in the writer's opinion she was a suitable case for observation in hospital. The bowels had been absolutely confined for seven days, notwithstanding the fact that she had taken several doses of opening medicine. She had a good deal of pain at times, but only vomited twice until coming into hospital, when the vomiting became continuous and stercoraceous. The abdomen was generally distended and resonant. The hernial orifices were free, and rectal and vaginal examination gave only negative results. The pulse was 84, regular, and of fairly good volume. Immediate operation was recommended and agreed to; consequently without delay she was brought to the theatre, and after the usual preliminary cleansing the abdomen was opened through the rectus muscle just to the left of the middle line.

A congested loop of intestine presented in the wound. On following this downwards some collapsed coils of intestines were detected in the pelvis. As the presenting loop was further followed it was found to be adherent to what was subsequently seen to be the inner orifice of the crural canal. Very slight traction released it, and on withdrawing it there appeared a small, circular ring of constriction around a button of the wall of the gut. The small portion thus snared was about equal in size to a threepenny piece. As this piece seemed in a doubtful state it was infolded transversely and a row of Lembert sutures placed over it. About four or five inches higher up the gut was opened, and as much of its contents as possible poured out. In order to evacuate still more of the coils a soft rubber tube was run some feet along them. This opening was quickly closed, but as there was still a good deal of distention another coil higher up was brought out and its contents evacuated

in the same way. The abdomen was then filled with warm saline solution, and the edges were quickly approximated. The whole procedure lasted but thirty-five minutes. Towards the end of the operation the House Surgeon informed me that her pulse had suddenly become very weak. Strychnin $\frac{1}{10}$ gr., with atropin $\frac{1}{100}$ gr., was administered, after which a marked improvement took place, but this was only temporary, for in spite of strychnin and saline subcutaneously and per rectum, she died some twelve hours later.

CASE VI. was that of a child, aged seven months, who was seized, on the night of the 25th of June, 1902, evidently with pain in its abdomen and vomiting. As this continued during the night, and as its motions contained some blood, its mother brought it next morning to the dispensary doctor, who at once gave the mother a note, marked "intestinal obstruction," to have the infant admitted to a Hospital for Diseases of Children. The mother with the child presented the note at 2 p.m. at this institution, but the nurse who saw her told her she must come again the next day to the dispensary and see the "head doctor," who had then left. Next day the "head doctor" saw the mother and child, but told the mother that it was dysentery the infant was suffering from, and that he would order some medicine for it, which she was to give every second hour. As the baby only seemed worse next day the mother again took it to the dispensary, and this time was given a note to me to the Meath Hospital, where I saw the case at once, as I happened to be in the theatre of the hospital at the time after operating on a case of imperforate rectum. This was about 3 p.m. on a Saturday, the child having got ill on the previous Wednesday night. The diagnosis made was that of acute intussusception, which could be felt passing round from the right side over the left side of the pelvic brim. I did not consider it necessary to examine by the rectum, but had the abdomen washed and opened it freely through the right rectus muscle under chloroform anaesthesia. The intussusception, which extended half-way down the rectum, was all easily reduced until the last couple of inches. At this point gentle squeezing from below only ruptured the peritoneum over the sheath of the intussusception, consequently I simply resected the whole mass and sutured the end of the ileum to the cut end of the ascending colon. A half-inch incision was first made along the anti-mesenteric border of the cut end of the ileum, and the edges pulled out; in this way its circumference was made

to easily approximate that of the ascending colon. One single row of sutures was all that was used, after which the abdomen was filled with warm saline, and the wound closed, but the child never rallied from the shock, and died six hours later.

CASE VII. was that of a man, aged about fifty years, who was admitted about 7 30 p.m. on the 22nd of October, 1902. The history was that for ten days before admission his bowels had not acted. The history prior to this revealed nothing of importance. He took medicine, which had no effect, and for the three days prior to admission he vomited almost everything he ate or drank. On examination the abdomen was generally distended, but the percussion note, though not absolutely dull, was not quite so resonant over the lower left side. The pulse was of fairly good volume and regular. The tongue was moist and but slightly furred. Hernial orifices free, and rectal examination revealed nothing.

Operation was recommended, and at once acceded to by the patient. He was thus operated upon about one and a half hours after admission. The abdomen was opened through the left rectus and the hand introduced into the pelvis and towards the left side, when at once a hard, rounded mass was felt in the pelvic colon. It seemed pretty freely movable. The intestine above was very much distended, and, taking everything into consideration, I came to the conclusion that a temporary colostomy would give the man the best chance. This was at once done—a loop of the sigmoid flexure being brought out, taking care to get a portion as far away from the growth as possible, so as to permit of the subsequent removal of the growth and end-to-end anastomosis. The primary incision was then rapidly closed by half a dozen through-and-through sutures, one of my clinical clerks meanwhile holding the sigmoid loop in the wound to which I hoped to fix it. My other clinical clerk accurately approximated the edges of the skin of the primary wound with fine sutures while I completed the colostomy. The gut was at once opened and its contents evacuated. A tube was then tied in and the patient put to bed in excellent condition. The operation lasted only thirty-two minutes. He rapidly recovered consciousness, and I left him with a good pulse and apparently free from shock, the gut discharging well. About one and a half hours subsequently he spoke to the nurse, who was sitting beside him, and said he felt weak. At this time she could scarcely feel his pulse, so she gave him some brandy and sent for the House Surgeon, but before he

could get into the ward the man was dead. The *post-mortem* revealed mitral valve disease. The tumour and the heart were subsequently examined by Professor White, who reported that the tumour was a columnar-celled carcinoma, and that in addition to the mitral valve lesion the heart presented well-marked fibrosis, with fatty infiltration.

Every operating surgeon must now and again have encountered a condition such as that exemplified in Case V., in which the pulse was good prior to the administration of the anæsthetic, but in which a complete transformation took place soon after its administration, thus altering the whole aspect of the case.

Is there any way by which we could arrive at the opinion beforehand that this would probably take place? I do not know of any. However, I am inclined to think that any patient, but especially one past the middle period of life, in whom the symptoms of complete obstruction have been present for upwards of a week with stercoraceous vomiting, should be considered a likely case in which such a sudden failure of the heart might be anticipated.

The rapidity with which this failure takes place is simply a measure of the severity of the septic poisoning. In such cases operation under eucaïn or cocaïn anæsthesia, even with their attendant disadvantages, would be the more correct procedure. Saline infusion might also be of benefit in such cases, given by an assistant immediately before or during the actual performance of the operation.

Some of these cases show the extent to which interference is indicated in any given case. In the early cases, where the patient's condition is fairly good, a free incision, and the complete removal of the cause of obstruction, followed by the evacuation of the contents of some of the coils of intestines, if distended; while in the later stages, in which the condition of the patient is very serious, merely a small incision with the drainage of the first congested loop which presents—the procedure generally associated with the name of the late Mr. Greig-Smith.

A more protracted operation than this in these serious cases will surely be fatal, whereas this simple procedure will occasionally be successful in tiding the patient over his dangers

for the time, when, under a more favourable condition, the abdomen can be opened and the cause of obstruction removed. Case IV. exemplifies the fact that there may be more than one cause of obstruction; consequently cases admitting of free exploration should be carefully examined for further causes of obstruction after one is found and relieved, and this more especially if there has been a history of previous peritonitis. Of this I had a very good example last April. It was that of a girl, who gave a history pointing to previous peritonitis, and on whom I operated on the fifth day and found a band strangulating a bunch of the coils of the jejunum. After removing this, the coils of intestines in the pelvis were found adherent and very acutely bent upon one another—a condition which, I have no doubt, would certainly have led, if not removed, either to a continuance of the symptoms or to another attack subsequently.

It may be noticed that in the two cases of intussusception immediate operation was the line of treatment adopted. This is the procedure I should always adopt, no matter how soon after the onset I had seen the case, because I believe that, on the principle of the greatest good to the greatest number, it gives a long way the best chances of recovery, and this more especially in the young infant.

If I have to operate again on cases of intussusception in which resection is necessary, such as in those I have detailed, I will certainly postpone the anastomosis for the time, and merely tie in a couple of Paul's tubes to drain the intestines after the resection has been completed. This would take only a few minutes, and I have no doubt will be attended with better results in a desperate and almost hopeless condition. An anastomosis could easily be done at a later period. The method of establishing an artificial anus with a gangrenous condition of the gut is absolutely contra-indicated, as it could only relieve the obstruction while the sepsis is still permitted to go on unchecked.

The treatment of cases such as the last case detailed illustrated—viz., strictures or tumours, whether simple or malignant, in which acute symptoms have supervened—is of great importance. No matter what the temptation to resection and end-to-end anastomosis at the time the explora-

tion is undertaken it should never be yielded to. The intestine above the obstruction should first be drained, either by tying in a Paul's tube or by performing a temporary colostomy or enterostomy, and the patient relieved of his obstruction in this way and tided over his condition of septic poisoning before the actual "*fons et origo mali*" is removed and the continuity of the gut established.

One other procedure might be adopted—viz., bring the loop of gut containing the tumour or stricture outside the abdomen, and quickly cut away the affected portion with its piece of mesentery, if the disease is believed to be malignant, and then tie a Paul's tube into each of the cut ends. A week or ten days later the continuity of the gut can be re-established. Resection and anastomosis in the presence of complete obstruction will so unduly prolong the operation that the case will in all probability terminate fatally, as the septic state in which these patients are absolutely contra-indicates any lengthened procedure. Furthermore, the condition of the walls of the intestine above the obstruction is such that the sutures will not hold, with the result that leakage and septic peritonitis will end the scene a few days later.

In all cases on which I operated, with the exception of two in this series (Cases I. and VI.), I invariably washed out the stomach before operation; and in my later cases have also washed it out again before the patient left the table, or have asked the House Surgeon to do so while I was putting in the superficial sutures to adjust the skin edges.

Even though the stomach is well washed out before operation it will invariably be found that, where there has been any manipulation inside the abdomen, the stomach has again become filled with the septic decomposing contents of the upper part of the intestinal tract—a condition which must either lead to vomiting as the patient is recovering from the anæsthetic, with the risk of an inhalation pneumonia, or further poison the patient by being absorbed from the stomach. Since I began washing out the stomach after as well as before operation, not one of my patients has subsequently vomited even once, though I frequently saw severe vomiting of stercoraceous material for an hour or two after operation, notwithstanding the fact that the stomach had been well washed out prior to the administration of the anæsthetic.

The mortality after operations for acute intestinal obstruction, in the hands of the most experienced operators, varies from 47 to 50 per cent. To what can this high death-rate be mainly attributed? Simply delay and the pernicious habit of meddlesome medication, if I may so term the reckless administration of purgatives in these cases.

There seems to me to be no reason why the mortality after operations for the relief of acute intestinal obstruction, provided that operations are undertaken soon after the onset, and performed by competent men in suitable surroundings, should be very much greater than after such operations as gastro-enterostomy, performed for simple conditions, or after such operations as those for the removal of gall-stones, the mortality of which is at present not more than 5 per cent., and, indeed, in the hands of several men even less than 5 per cent.

The difficulty of diagnosis, coupled with the fact that some cases of so-called "spontaneous cure" are occasionally met with, seems to be the cause of this delay. The correctness of the diagnosis in some of these so-called "spontaneous cures" must be open to doubt. Uncertainty of diagnosis, however, should not be permitted to unduly postpone operation, as many of the conditions which simulate obstruction, amongst which may be mentioned thrombosis of the mesenteric vessels, ruptured tubal pregnancy, ovarian tumour with twisted pedicle, peritonitis of a localised or general character, no matter what its origin, and acute pancreatitis, will most unquestionably be cured by early operation, while some, at any rate, will be benefited.

Personally, I would prefer to open an abdomen and find my diagnosis wrong and operation quite unnecessary than delay until the diagnosis of an obstruction was fully established, in which case an ever-increasing distention leading, it may be, to paralysis will then be encountered. Moreover, the condition of the patient will be one of more or less profound septic poisoning as well as exhaustion from pain and vomiting.

In conclusion, I will merely quote Sir Frederick Treves on this point, who says: "Operation in these cases is too often regarded as the last resource; it should be *the first* as it certainly is *the only* resource."

ART. IX.—*Clinical Report of the Dublin (Rotunda) Hospital for Poor Lying-in Women, for the Year ending November 1st, 1902.** By R. D. PUREFOY, M.D. T.C.D., F.R.C.S.I.; and G. W. FITZGERALD, M.D. Edin.; and GIBBON FITZ-GIBBON, M.D. Dub.

DURING this year 1,962 women were admitted to the Maternity, of whom 1,676 remained under treatment and afforded us opportunity for observing not only the commoner complications of childbed, but also such rare conditions as acute yellow atrophy of the liver, parotiditis, and puerperal aphonia. The deaths were six in number—viz., two cases of eclampsia, hopelessly ill at time of admission; one of puerperal sepsis, a patient in wretched general health during pregnancy; one of acute yellow atrophy of liver, developing a few hours after the removal of a hydatid mole; one of pneumonia, in a woman suffering for years from chronic lung disease; one of accidental hæmorrhage.

TABLE NO. I.—*Admissions to Maternity Department.*

—	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
Total deliveries -	113	188	134	120	129	149	169	165	189	144	143	133	1,676
Total abortions -	...	...	...	...	...	...	...	...	...	...	...	...	67
Total admissions	130	153	158	146	154	179	192	183	167	175	164	161	1,962

TABLE NO. II.—*Dispensary for Out-Patients.*

Number of first attendances,	-	-	-	4,330
„ repeated „	-	-	-	6,660
Total,	-	-	-	10,990

* Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, February 13th, 1903.

TABLE NO. III.—*Showing Nature and Number of Cases Treated in the Extern Maternity, 1901–1902.*

Total number of cases	- 2,190	Mania, acute	- - 2
Abortions	- - 262	Mortality, maternal	- 4
Hæmorrhage—		Twins—	
Accidental	- 16	Females	- - 7
Placenta prævia	- 14	Males	- 11
Post-partum	- 20	Male and Female	- 6
	—50	Female and monster	- 1
Hæmatoma cervicis	- 1		—25
Hydramnios	- 11	Triplets, 2 F., 1 M.; 3 M.	2
Infantile conditions—		Operations—	
Anencephalus	- 2	Curetting for abortion	167
Hydrocephalus	- 4	Forceps	- 56
Spina bifida	- 1	Placenta removed	
Hydrocephalus and spina		manually	- 32
bifida	- 1	Version	- 29
Imperforate anus	- 1		—284
	— 9	Presentations—	
Moles—		Breech	- - 45
Hydatidiform	- 1	Brow	- - 2
Carneous	- 3	Elbow	- - 2
	— 4	Face	- - 5
Mortality, infantile (born dead)—		Footling	- - 5
Macerated	- 10	Knee	- - 3
Non-viable	- 23	Occipito-posterior	- 16
Premature	- 30	Shoulder	- 3
Recent	- 24	Transverse	- 8
	—87		— 89
		Prolapse of funis	- - 15

MATERNAL MORTALITY IN EXTERN DEPARTMENT; HISTORY OF CASES.

CASE I.—Mrs. L., aged twenty-eight, 2-para; delivered Dec. 3, 1901, of a four months' foetus. When patient was first seen she had already been delivered for three hours, but the placenta was still retained, and bleeding had been occurring since. On examination the placenta was found partly expelled and gripped in cervix. It was removed with finger and curette, and the hæmorrhage ceased. Temperature was 99·2°, pulse 160, respiration 40. The patient was at the time being attended by dispensary doctor for chest complaint. Râles and rhonchi were heard over both lungs. Patient was delirious at times, and died on the following day, Dec. 4th.

CASE II.—Mrs. B., aged thirty-six ; delivered on Dec. 9th of a four months' foetus. When first seen the miscarriage was complete and no bleeding occurring. No examination was made as patient was delirious—pulse 110, temperature 99·6°, and as patient was under the care of dispensary doctor for chest trouble. Patient died two days later, on Dec. 16th.

CASE III.—Mrs. S. H., aged thirty, 7-para; delivered on Feb. 12th of a six and a half months' child. The placenta had come away half an hour before being first seen ; there had been some *post-partum* hæmorrhage—pulse 120, temperature 99·4°. On evening of 12th, temperature 102·4°, pulse 114 ; next day, 13th, temperature 103·4°, pulse 128, the uterus was douched and curetted, and a gauze drain inserted as the lochia was foul. On 14th, temperature 101°, pulse 116, the uterus again douched and gauze drain inserted. This was done daily until the 18th, on which day the lochia had become normal, the temperature 102°, pulse 130, and there were signs of pneumonia, which was distinctly developed on 19th. The temperature on that day was 104°, pulse 130. Patient died on 20th.

CASE IV.—Mrs. S., aged twenty-seven, 1-para ; delivered on June 25th. Patient first seen on June 24th ; there was marked œdema of legs and rest of body. Patient said she had been like this for three weeks previously, and had scanty urine. There was a systolic mitral murmur. On examination the os was found only partially dilated. At 4 a.m. on the 25th the os was fully dilated, but patient was unable to deliver herself. Uterine inertia was setting in, so forceps were applied and delivery completed—pulse 88, temperature 99·4°. On third day the temperature was 103·6°, pulse 120. The œdema was undiminished, the uterus was douched and curetted, but no cause for rise in pulse and temperature was found. The urine was examined and found laden with albumen. Patient complained of very severe headache, and was given diuretic mixture. On fourth day the temperature was 105°, and pulse 100, and two hours later temperature was 107·4°. The patient died about one hour later.

INTERESTING CASES IN THE EXTERN MATERNITY.

CASE I.—Mrs. K. M'C., aged twenty-six, fourth pregnancy ; delivered Dec. 26th, 1902. *Hydatidiform mole*. Patient considered herself six months pregnant. She suddenly started bleeding one hour before being seen. She was found to be very

œdematous, and had considerable suppression of urine. The uterus was hard and slightly tender. Patient was evidently threatened with eclampsia. The hæmorrhage was continuing, and as the os was closed the vagina was plugged and patient given diuretic mixture. The following day the plugging was removed, and the uterus expelled a hydatidiform mole; slight hæmorrhage continued, which ceased when the remainder of the mole was removed with the finger and blunt curette. Patient discharged well on 11th day.

CASE II.—Mrs. M. M., aged twenty-nine, fourth pregnancy; delivered Jan. 29th, 1902. *Severe post-partum hæmorrhage.* When first seen patient had been delivered of a full term child. The placenta had come away, but considerable *post-partum* hæmorrhage had occurred and was continuing. Patient was rather collapsed, pulse 130. The bleeding was controlled completely for a time. Thirteen hours later patient sent to hospital again on account of bleeding. When seen a very considerable quantity of hæmorrhage had occurred, the bleeding having been continuing for a considerable time. The patient was very collapsed and blanched, pulse 150. On proceeding to douche the uterus a large hæmatoma of the cervix (anterior lip) was found; the uterus was douched and curetted and some placental fragments and membranes removed, and the bleeding ceased. Whisky and strychnin were given, pulse dropped to 135. Three hours later patient was very low, pulse 160. Saline solution, 1 pint, was injected into breast. The pulse came down to 120. From this on the patient gradually improved, and was discharged well.

CASE III.—Mrs. K., 5-para, was delivered on Dec. 10th of *triplets*. The first child was born at 5 a.m. as a breech, alive. The second was not born until 11 15 a.m., the membranes having been ruptured artificially at 8 a.m. A common placenta followed this child, which presented by vertex. These two children were both females, and both alive. The third child was born immediately after the first placenta, being expelled in the membranes, and followed at once by its placenta. This child was asphyxiated, and died one hour after birth, having been Schultzed; this child was a male. The second child died of convulsions when nine days old. The first child was alive at the time the case was discharged, twelve days old.

CASE IV.—Mrs. K. M., sixth pregnancy, was delivered on 28th of March, 1902, of *triplets*. All three children were born on

TABLE No. IV.—Accidental Hemorrhage Cases in *Extern Maternity*.

Name	Age	Date	Para	Variety	Treatment	Result to Child	REMARKS
M. V.	27	Nov. 20th	6	Ext.	Vagina plugged	Alive	Labour had commenced; child born in 7½ hours.
M. G.	29	Jan. 23rd	7	"	"	Dead	7 months' foetus; labour set in quickly, and plugging removed in 5 hours. Membranes ruptured.
W. K.	20	Feb. 6th	4	"	"	"	6 months' foetus; plug removed in 17 hours. Labour followed, and patient delivered herself in 10 hours.
L. D.	27	Feb. 7th	4	"	"	"	6 months' foetus; labour followed in 14 hours.
R. O'N.	35	Feb. 12th	7	"	"	"	Labour followed in 8 hours.
A. S.	23	Feb. 18th	1	Mixed	Prophylactic	Alive	Bleeding for a few days before labour came on. Large clot expelled with placenta.
M. R.	27	Feb. 23rd	4	Ext.	"	"	Bleeding ceased when labour set in.
A. M.	—	March 5th	2	"	Vagina plugged	Dead	Labour came on 28 hours after plugging.
W. R.	38	April 20th	14	"	"	Alive	Child born in 3½ hours.
M. G.	31	May 10th	2	Mixed	"	Dead	Child born in 4 hours.
M. C.	38	Aug. 4th	12	Ext.	"	Alive	Presentation transverse; version performed when plug was removed. Labour did not ensue for 86 hours.

arrival—1st by vertex, 2nd breech, 3rd vertex. They were all males, and had one common placenta. The first two children were alive, the third was dead.

CASE V.—(*Acute Hydramnios*).—Mrs. E. D., aged thirty-two, 8-para ; delivered on June 21st, 1902, of twins ; second sac of membranes was hydamniotic. Patient was six and a half months pregnant, and considered herself so. When first seen she was the size of full term ; she said she had been what she considered a normal size for the period of pregnancy three days previously, but had then rapidly increased in size. The first child was born normally, and the sac contained only an ordinary quantity of liquor amnii. The second sac was found extremely tense ; the membranes were ruptured, and the second child extracted by a foot, as it was found to be lying transverse.

CASE VI.—Mrs. B. M., aged thirty-two, 8-para ; delivered on July 21st (spontaneous expulsion). Patient was five and a half months pregnant. When first seen the os was well dilated, and the child, which was slightly macerated, was lying transverse, and had partly descended into the cavity of pelvis. The patient delivered herself ; the child being expelled by spontaneous expulsion.

CASE VII.—Mrs. C., aged thirty-nine, multipara. *Tubal abortion*. Patient sent to hospital on account of slight bleeding which had occurred six hours previously, but which had ceased on arrival. Patient gave history of being two months pregnant. She had some bleeding three days previous to being seen, at which time she had also had slight pain and had become faint ; she thought she had aborted at this time. On examination the uterus was found pressed up tightly against the symphysis by a firm, elastic tumour, which was filling Douglas's space ; the pulse and temperature were normal. Patient would not come to hospital. She was seen three weeks later and was in good health.

CASE VIII.—Mrs. E. W., aged thirty-two, third pregnancy ; delivered on June 2nd, 1902. Patient was found to be paralysed all down the left side of body, arm and leg, and had been so for three years. On June 3rd the pulse was 120, temperature 98·8°. On 5th, pulse 112, temperature 99·6° ; the lochia quite normal. On 8th, pulse 120, temperature 102°. The uterus was douched and curetted, but nothing came away ; the lochia was normal. It was then found that patient was constipated since confinement, although she had been ordered to take oil, and has said that the

bowels had acted well on third day. After douching, the temperature came down to 100·8°, pulse 120. On June 8th, seventh day, the temperature was again 102·2°, and pulse 120; oil and enema had been given, but had no result. Purgative again given, which acted well, and on ninth day, temperature 100°, pulse 102; the lochia was quite normal, containing very little blood. On eleventh day the pulse was 145 and temperature 104·2°, and both continued high until fourteenth day, when temperature was 104·6°, pulse 140, and patient was found to have developed paralysis of the right side, arm, and leg. The case was then transferred to Dispensary Doctor.

TABLE NO. V.—*Showing Number and Nature of Cases Treated in the Intern Maternity.*

Total number of cases	- 1,676	Multiple pregnancy—	
Primiparæ - - -	534	Twins, viz.:—	
Abortions - - -	67	Female - - -	5
Deformed pelvis - - -	11	Male - - -	6
Eclampsia - - -	5	Mixed - - -	10
Epilepsy - - -	2		— 21
Erythema - - -	10	Myoma uteri - - -	9
Œdema vulvæ - - -	5	Aphonia - - -	2
Hæmorrhage, viz.:—		Puerperal ulcer - - -	2
Accidental - - -	21	Rupture of uterus - - -	1
Unavoidable - - -	6	Operations—	
Post-partum - - -	43	Forceps - - -	65
Secondary - - -	3	Induced abortion - - -	5
Hydramnios - - -	15	Induced labour - - -	7
Hyperemesis - - -	2	Manual removal of	
Morbidity - - -	103	placenta - - -	26
Moles - - -	1	Perforation - - -	1
Mortality, infantile—		Version - - -	6
Macerated - - -	19	Decapitation - - -	2
Premature - - -	17	Diseased infantile conditions—	
Recent - - -	25	Talipes - - -	4
Mummified fœtus - - -	2	Anencephalus - - -	3
Mortality, maternal - - -	6	Cephalhæmatoma - - -	5
Mania - - -	2	Hydrocephalus - - -	2
		Ophthalmia - - -	7
		Spina bifida - - -	2
		Hare-lip and cleft palate - - -	1
		Presentations—	
		Breech and Footling - - -	45
		Brow - - -	5
		Face - - -	2
		Occipito-posterior - - -	10

INDUCED ABORTION.

CASE I.—M. G., aged thirty, 9-para. Pregnancy had reached sixth month, and was associated with considerable hydramnios. Patient was in advanced pulmonary phthisis, and for several days was voiding urine containing blood in considerable quantity and tube casts. As rest and suitable treatment were not followed by any improvement, I determined to empty the uterus, and accordingly three bougies were passed into uterus, and vagina was plugged. On the following day, no pains being present, laminaria tents, twelve in number, were inserted in cervix, and the faradic current was used at intervals. About ten hours subsequently good pains came on, and the tents and bougies were removed; during this proceeding nearly 14 pints of liquor amnii escaped, and were soon followed by the birth of a six months' foetus. The placenta required manual removal. A normal puerperium followed, and urine was free from blood at the time of her discharge.

CASE II.—M. H., aged twenty-four, 4-para; admitted on account of excessive vomiting in the 4th month. Examination showed cervical erosion, which was improved by treatment, but without relief to the vomiting; and as the patient continued to lose strength, it seemed advisable to terminate the pregnancy. Five laminaria tents were placed in cervix, and vagina plugged; and on the following day the uterus was emptied with the flushing curette and ovum forceps. Convalescence was rapid and satisfactory, though constipation was very troublesome.

CASE III.—M. M'C., aged thirty-two, 7-para; had considerable intermittent bleeding during two weeks before admission, at which time she was presumably four months pregnant, the outline of the uterus being rendered very prominent by a fibroid situated in anterior uterine wall. Patient complained of foul taste in mouth; nausea and shivering and a bloody vaginal discharge was present. Tents were placed in cervix, tampon placed in vagina; and about twenty hours later it was found possible to empty the uterus, and a satisfactory puerperium followed.

CASE IV.—E. D., aged twenty-five, 3-para; admitted on account of hæmorrhage; in the fourth month of pregnancy. Rest in bed was followed by temporary cessation of bleeding; but it soon recurred, alternating with brownish watery discharge. Tents were passed into cervix, a vaginal tampon inserted, and in

twenty-four hours the cervix was sufficiently dilated to permit the emptying of the uterus, which contained, in addition to the ovum, a large quantity of blood clot. Convalescence satisfactory in every respect.

CASE V.—C. K., aged twenty-two, 2-para. Patient was two months pregnant when admitted to hospital on account of hæmorrhage, which was partially checked by rest in bed for a few days. It then became so considerable that active treatment was necessary, and with the aid of Hegar's dilators it was found possible to empty the uterus.

TABLE OF CONTRACTED PELVIS.

Our present Report deals with a considerably smaller number of cases of contracted pelvis than that of last year. In four cases premature labour was induced; all of these had undergone this treatment in the Rotunda on former occasions. In four out of the total of nine cases delivery was effected with the forceps; three of the infants were born alive, but in the case of the fourth respiration was not established, though the heart was beating at time of birth. In two cases, following the induction of premature labour podalic version was performed. In the remaining three delivery was unassisted.

TABLE NO. VI.—Cases of Contracted Pelvis.

Name	Age	Para	Pelvic Measurements					Mode of Delivery	Result to Child	REMARKS
			C. V.	Trans.	Ext. C.	I-C.	I-S			
A. M.	25	I.	6.5	6.75	15.5	25	20.5	Forceps	D. 6½ lbs.	Membranes ruptured 12 hours before admission. Fœtal heart beating at time of birth. Induced labour.
M. M.	36	V.	9	10.5	—	—	—	Natural	A. 6½ "	
M. D.	23	III.	6.25	—	17.5	30.5	27.5	Podalic version	D. 4 "	Do.
J. D.	21	I.	—	—	—	—	—	Forceps	A. 5 "	Rostrate pelvis.
M. D.	32	V.	8.75	10.5	—	—	—	Podalic version	D. 3 "	Induced labour. Bougies and tents in cervix for 30 hours. Soon after their removal bleeding occurred, and, as placenta could be felt, version was performed.
M. S.	27	II.	6.5	10.5	—	—	—	Natural	A. 6½ "	In the former labour also the child was born alive, 5½.
A. G.	22	I.	—	7.2 at outlet	16	23	19.5	Forceps	A. 7½ "	Narrow outlet.
E. S.	32	II.	8	7.5	17.5	27	23.5	"	A. 8½ "	Oecipito-posterior.
K. M'E.	43	VI.*	—	—	—	—	—	Breech	A. 5½ "	Induced labour.
M. D.	20	I.	3	—	—	—	—	Perforation	D.	During first stage membranes ruptured and the cord prolapsed; pulseless; no fœtal heart heard two hours previously.
J. D.	21	I.	—	—	—	—	—	Forceps	A.	Rostrate pelvis. Head arrested in cavity.

* See former Report.

TABLE NO. VII.—*Accidental Hæmorrhage.*

Name	Age and Para	Date	Variety	Treatment	Result to Child	Remarks
1. A. O'B.	32, III.	Dec. 9, 1901	External	Membranes ruptured	Alive	Child born 2 hours after admission.
2. E. E.	25, V.	Dec. 26	"	None	"	Patient was kept in for four days, and was delivered 11 days after occurrence of hæmorrhage.
3. M. W.	35, VIII.	Jan. 1, 1902	"	Vagina plugged and tight binder	Dead	Hæmorrhage occasionally for five weeks; became copious on day before admission. On admission os admitted one finger. Child born in 22 hours.
4. M. K.	21, II.	Jan. 15	Internal	None	Dead, non-viable	Considerable hæmorrhage occurred on rupture of membranes and then ceased. Child born in two hours; placenta with child.
5. E. N.	31, IV.	" 17	Internal and external	Vaginal plug and binder	—	Patient in collapse when admitted; no external bleeding, but this showed shortly after; vomiting occurred three and a half hours after admission, and patient died.
6. E. T.	44, XII.	June 12	Mixed	None	Alive	Premature; 1½ lbs. of clots with child.
7. R. M.	20, I.	" 20	External	"	"	Hæmorrhage slight; good labour. Child born in three hours.
8. M. O'C.	25, I.	Apr. 28	"	"	"	Premature; 8th month. Delivered in 30 mins. after admission.
9. S. E.	30, I.	" 27	"	"	"	Hæmorrhage occurred one week before, and again just prior to, admission. Child born one and three quarter hours after.

TABLE NO. VII.—*continued.*

Name	Age and Para	Date	Variety	Treatment	Result to Child	Remarks
10. L. P.	23, III.	Apr. 26	Internal	None	Alive	Large organised clot on placenta.
11. L. T.	24, V.	" 10	External	Membranes ruptured; tight binder	"	Hæmorrhage before admission and occurring with each pain; cord, tightly round neck of child, had to be divided to allow of delivery.
12. E. M. G.	23, I.	Feb. 28	Mixed	Vaginal plug and tight binder; forceps delivery	Macerated	Pulse very variable; hæmorrhage going on; uterus tense and tender on palpation.
13. K. D.	23, I.	May 4	External	Vaginal plug, followed by rupture of membranes	Dead, 8th month	Slight pains when admitted, strong labour after plugging. Child born in six hours.
14. M. R.	26, V.	" 8	"	Tents and plugging; version	Dead, non-viable	Patient was plugged five days before admission for hæmorrhage, which ceased until just before admission; labour induced, and version performed.
15. E. P.	35, IV.	July 4	"	None	Alive	Bleeding slight. Child born in four and a half hours.
16. B. B.	29, IV.	" 28	"	Membranes ruptured	"	Intermittent bleeding six hours before admission; then became smart; os three-fourths dilated. Child born half an hour after rupture of membranes.
17. C. G.	29, VI.	" 2	Mixed	None	Dead	Slight external bleeding; 1½ lbs. of clots expelled with placenta.
18. K. K.	25, I.	Sept. 2	External	"	Alive	Hæmorrhage slight on admission, ceased very soon without treatment.

TABLE NO. VII.—*continued.*

Name	Age and Para	Date	Variety	Treatment	Result to Child	Remarks
19. E. G.	30, XII.	Sept. 20	External	Vaginal plug and version	Dead, 6th month	Hæmorrhage had been going on for ten days; vagina plugged before admission; no bleeding after. Version performed, when plug was removed. Child born in 30 hours after plugging.
20. M. L.	30, III.	Nov. 12, 1901	„	Membranes ruptured	Alive	Child born one and a half hours after rupture of membranes.
21. B. D.	36, VII.	Nov. 19	Internal	Vaginal plug and binder	Dead	Child born three and a half hours after plugging; 1½ lbs. of clots expelled; placenta born with child.

ACCIDENTAL HÆMORRHAGE.

The cases tabulated under this heading illustrate varying degrees of severity in this formidable complication of childbed; out of the total, 21 in number, ten did not call for active treatment; in four, rupture of the membranes proved sufficient; in six, the use of the vaginal tampon was deemed necessary; and in one, in addition to this measure, the cervix was dilated by laminaria tents. Forceps delivery was found advisable in one instance. In Case No. 11 the funis was so tightly coiled round the infant's neck that it was found necessary to tie and divide it before delivery could be completed. The patient, No. 5 in our table, was admitted in a state of collapse; though no external bleeding had occurred, the patient's aspect and the tense condition of the uterus strongly suggested the diagnosis of concealed hæmorrhage. On vaginal examination the os barely admitted one finger; the membranes were unruptured, and the presenting head not fixed. Soon afterwards profuse external hæmorrhage took place; the vagina was tamponed and a binder applied. Strychnin

and stimulants were given, and some slight improvement in her condition was observable for a few hours. A fit of vomiting then occurred, immediately after which the patient expired.

TABLE NO. VIII.—*Placenta Prævia.*

Name	Age and Para	Date	Variety	Presentation	Period	Result to Child	Remarks
1. M. C.	40, VII.	Feb. 22	Marginal	Vertex	7½ months	D.	Bipolar podalic version. Soon after expulsion of placenta and mummified foetus and placenta were expelled.
2. M. M'D.	24, III.	April 3	Lateral	"	8 "	A.	Unassisted.
3. L. W.	33, IX.	" 30	"	"	6 "	D.	Induced labour.
4. M. S.	22, III.	Sept. 3	"	"	8 "	D.	Bipolar podalic version.
5. H. M.	38, X.	Mar. 6	"	Head and Foot	7 "	D.	Version internal.
6. M. D.	32, V.	" 17	Marginal	Vertex	7 "	D.	Bipolar podalic version. Premature labour had been induced on account of pelvic contraction.

PLACENTA PRÆVIA.

In only six cases was the placenta abnormally situated; and the mothers all enjoyed a favourable convalescence, though the mortality amongst the infants was higher than usual.

PRESENTATIONS OF HEAD OTHER THAN VERTEX.

There were ten cases of persistent occipito-posterior, five of which required forceps delivery; the remainder were delivered unaided. In five instances the brow presented; in three of these delivery was unaided and presentation unaltered all through labour. In one case the forceps were used, and in

one the presentation was changed to vertex by Schatz's method. In two cases of face presentation delivery was unaided; in each case the foetus was anencephalic.

HYPEREMESIS; INDUCED LABOUR; CURE.

CASE I.—A. C., aged thirty-five, was admitted to hospital January 29, near the end of her 9th pregnancy. Patient, whose aspect was truly wretched, stated that vomiting had been troublesome during the whole pregnancy, but especially during the preceding four weeks, when it was attended with severe epigastric pain. The tongue was morbidly clean, of a deep red colour, and thirst was present in a distressing degree. The vomited matters were of a dark-brown colour. Pulse and temperature normal; urine slightly albuminous. The remedies generally efficacious in relieving emesis were tried for some days, without avail, so I proceeded to induce labour by passing bougies into the uterus and sea-tangle tents into cervix, at the same time plugging the vagina lightly. In a few hours vigorous labour pains came on and a healthy living child was easily born. Immediate relief from vomiting followed, and such satisfactory recovery of strength that in a few days the patient was able to nurse her infant. Relief to the bowels was not obtained till the 7th day after her admission to hospital, and during the same time not even flatus passed; yet no tenderness or distention of the abdomen was observable. The day after delivery a dose of calomel, followed by massage of the bowels, effected the desired result. Notwithstanding the speedy improvement which followed the emptying of the uterus, I am of opinion that the pregnancy was only one of many factors to which the excessive vomiting was attributable; and the long-continued inaction of the bowels for some time led me to apprehend that the trouble was intestinal rather than uterine.

CASE II.—*See* "Induced Abortion."

HYDRAMNIOS.

Nine cases of this affection were under observation during the year; all the children were born alive, except one, premature at the sixth month; and all well formed except two, of which one showed spina bifida and talipes varus, and the other hare-lip and cleft palate.

MULTIPLE PREGNANCY.

In the case of M. A., aged thirty, 7-para, some bleeding occurred before admission, but had not continued. On the following day, the os being well dilated, and some hæmorrhage recurring, membranes were ruptured, and a binder applied. As uterine action continued feeble delivery was completed with the forceps; and the second child presenting by the shoulder, was delivered by version. Placenta removed manually owing to morbid adhesion.

M. W., aged twenty-four, 1-para; took ill prematurely. The first child was anencephalic and presented by the face; the second child, also very small, presented by the breech, and was born alive.

M. K., aged twenty-one, 1-para, suffered from frequently recurring epistaxis from the fourth month, though less troublesome in the latter weeks. Both children born alive.

Many years ago I admitted to the Adelaide Hospital a patient in the eighth month of pregnancy, who had nearly died from persistent epistaxis. The insufflation of tannic acid was effectual in stopping the bleeding, and some days later she was delivered of a stillborn infant, and made a good recovery. This patient on a former occasion, I was informed, nearly lost her life from uterine hæmorrhage.

M. C., aged twenty-five, 1-para, was admitted in labour, and a foot was found presenting. No difficulty was experienced with the arms; but the head of the second twin having entered the pelvis, the completion of delivery was found impossible, till decapitation of the first child was practised. The second child was born alive.

In two cases hydramnios was observed, and it is interesting to record that they both illustrated the correctness of Dr. M'Clintock's remark that in cases of twins the second ovum is that most commonly affected.

In the case of E. P., aged twenty-four, 2-para, the second presentation was compound, consisting of head, cord and hand. Replacement of cord and hand was effected, and natural delivery followed soon after.

In another similar case the head and feet of second child presented, and delivery was completed as a footling.

In the case of F. O'C., aged twenty-six, 6-para, the first

child, macerated, presented by the vertex and was born unassisted. The second, also macerated, lay obliquely, and in the interests of the mother decapitation was performed.

MULTIPLE PREGNANCY—TWINs.

Male and Female	..	..	..	..	10
Both Male	..	..	..	..	6
Both Female	..	..	..	..	5
Female and Mummified Fœtus	..	..	..	..	1
Premature	..	..	..	..	8
Both Vertex	..	..	..	..	9
Vertex and Breech	..	..	..	..	2
Breech and Vertex	..	..	..	..	2
Vertex and Transverse	..	..	..	..	2
Breech and Head, Cord and Hand	..	..	..	..	1
Face and Breech	..	..	..	..	1
Both Breech	..	..	..	..	3
Both Footling	..	..	..	..	1

TABLE NO. IX.—*Application of Forceps.*

Indication	No.	Dead Children	Remarks
Delay in 2nd stage, with danger to mother and child - - -	49	4	
Eclampsia - - -	1	—	
Threatened rupture of uterus - - -	2	—	
Accidental hæmorrhage	1	1	
Pelvic contraction -	4	—	
Prolapse of funis -	2	—	
Persistent occipito-posterior - - -	5	—	
Brow - - -	1	—	
Tumour obstructing delivery - -	1	—	
Total, - - -	66	5	

SUB-TABLE A.—*Application of Forceps.*

I.-para	-	48	VII.-para	-	3
II.-para	-	7	VIII.-para	-	2
IV.-para	-	2	IX.-para	-	1
VI.-para	-	2			
					Total
					65

SUB-TABLE B.—*Ages of Cases.*

17-25	-	-	29
26-30	-	-	22
31-35	-	-	9
36-40	-	-	3
41 and over	-	-	2

Although the total cases under treatment were considerably more numerous than those recorded in our last Annual Report, the forceps deliveries were somewhat fewer; and, as has been often observed before, the patients were chiefly primiparæ. In 16 cases episiotomy was performed, and I still prefer the median incision. The patient M. F., aged forty-three, 7-para, was in hospital in 1897, when it became necessary, owing to the conditions present, to deliver by perforation, while the os was only three-fifths dilated. In October of this year, while dilatation was still incomplete, it again became necessary to terminate the labour owing to threatened rupture of uterus. Happily it was found possible to apply the forceps and deliver the child alive.

Only one case of brow presentation, and only five of persistent occipito-posterior, required instrumental delivery. In the case of B. M., primipara, aged twenty-seven, extraction was very difficult and prolonged, and the funis was very tightly coiled round child's neck; efforts to resuscitate it proved unavailing. In the case of J. T., aged thirty-four, 7-para, admitted from Extern Maternity, the advance of the head was prevented by a tumour, resistant enough to be considered a fibroid, and large enough to fill the pelvis. Under anæsthesia it was found possible, though with much difficulty,

to push it out of the pelvis, and expedite delivery by applying the forceps. During the puerperium there was a continuous, though slight, elevation of temperature, and a tender tumour, similar in size and consistence to that found in the pelvis, lay in the right iliac fossa. The patient being weakly, I deemed it advisable to defer its removal for a time ; and the subsequent history of this very interesting case will appear in our Gynæcological Report.

A primipara, M. B., aged twenty-eight, was found after delivery to have a laceration of cervix and perineum, and in the vestibule, attended with considerable bleeding ; sutures were applied, and a most satisfactory convalescence ensued. A prolonged second stage in the case of a primipara, M. W., aged twenty-two, rendered a vaginal examination expedient, when the left parietal bone was found to be presenting, and on it was observed an abrasion the size of a shilling. Delivery with the forceps was effected without difficulty, but the temperature was abnormally high for four days, during which time the woman became deeply jaundiced. Phosphate of sodium was given with much benefit, and a normal puerperium followed. Jaundice in childbed generally implies a profoundly deteriorated condition of the blood, due to sepsis, or other equally serious causes ; and I cannot recall another case similar to the one just narrated. Vomiting of wine-coloured fluid, mixed with black, flaky matter, occurred in the case of M. R., 1-para, aged twenty-five, a few hours after delivery with the forceps, but the subsequent puerperium was uneventful.

The primipara, M. J. F., aged twenty-two, presented in a marked degree the build and general aspect of a Cretin—prominent, high forehead ; scalp thinly clad with wiry hairs ; belly so pendulous that it rests on patient's thighs ; kyphosis of lower dorsal region of vertebral column ; lordosis of upper dorsal and lower cervical regions. The narrowness of the pubic arch and introitus vulvæ rendered inevitable a considerable lesion of the pelvic floor, but the child was delivered alive, and a satisfactory, though tedious, convalescence followed. Early rupture of membranes followed by much delay in labour necessitated the application of the forceps while the head was still above the brim in the case of S. M.,

6-para, aged thirty-seven. Extraction was easy when the head had been drawn through the inlet. Tight winding of the cord round the neck and prolonged and difficult extraction were the obstacles to the birth of a living child in the case of B. M., 1-para, aged twenty-seven.

The infant of C. Q., aged twenty, 2-para, suffered from slight left-sided facial paralysis, the forceps having been used when the mother was presumably 10 hours in second stage.

C. B., aged thirty-six, 8-para, suffered much during a protracted first stage, and when a vaginal douche was being used, previous to the application of the forceps, a piece of the posterior lip of cervix was found lying loose in vagina. I had an exactly similar experience some months ago in a case in which the brow presented.

The child of J. S., 1-para, aged twenty-seven, delivered with forceps, on account of delayed second stage, presented soon after birth 3 cephalhæmatomata on posterior aspect of skull.

The following recital will afford scope of conjecture as to the cause of the alarming condition which followed delivery; in my opinion partial rupture of the uterus took place:—G. R., aged forty-two, 4-para, when only a short time in the second stage began to strain so violently, the presentation at the time being occipito-posterior, it was deemed necessary to aid delivery with the forceps. Incomplete rotation of head occurred, and much difficulty arose in delivery of the shoulders, the right one becoming hitched over the symphysis. The child's heart was beating feebly at birth, but ceased shortly afterwards. At completion of delivery patient's pulse was rapid and feeble; and despite the use of stimulants and injection of strychnin and digitalin, in an hour or two afterwards very alarming collapse was present, the radial pulse becoming imperceptible and surface cold. Restorative treatment was followed by slow improvement, and the next morning the pulse could be counted, but there was marked swelling and tenderness of the belly, and frequent vomiting of small quantities of dark fluid. Morphin was injected at intervals, a wet pack spread over the belly, and nourishment administered by the bowel. On the third day movement of the bowels followed a dose of calomel, and soon afterwards the vomiting ceased and was replaced by a very relaxed

condition of the bowels, lasting for several days. An elevation of pulse and temperature on the seventh day was treated by douching and tamponade of the uterus with iodoform gauze; and at this time marked thickening and resistance were felt in anterior fornix. Her further convalescence was somewhat retarded by the formation of a small abscess in left parotid gland, but she was able to leave the hospital soon afterwards, and is now in excellent health. At the time of her discharge, in addition to the above-mentioned swelling and hardness, and swelling in vaginal fornices, it was observed that the outline of the corpus uteri could not be felt distinctly, owing, I believe, to the existence of numerous intestinal adhesions.

In this most interesting case, the constitutional symptoms, and the local signs which followed them, left no doubt in my mind that an incomplete internal rupture of the uterus occurred, though no examination which I thought warrantable at the time enabled me to detect its exact position; and the favourable issue should prove most encouraging in dealing with other similar cases. In this connection I think it interesting to recall two cases mentioned in my former Reports. In one, a primipara, no serious cause for alarm was present till several hours after a natural unaided labour of moderate duration; yet a fatal ending occurred on the fourth day, and a complete rupture of small size was found in the posterior wall of the lower uterine segment. In another, a multipara, premature labour came on at the sixth month, and the pains having ceased after one of unusual severity, a vaginal examination was made. The body of the foetus, lying transversely, was found protruding through a rent in the left uterine wall, and on its delivery a coil of intestine followed it. This was replaced, and a tampon of iodoform gauze was inserted. An excellent recovery ensued. No indication of the lesion was given by either pulse or temperature. One point at any rate is manifest—viz., that we have not yet sufficient data for formulating any special rule for the surgical treatment of these cases.

In the case of E. S., aged thirty-two, 2-para (see also under "Contracted Pelvis"), vagitus uterinus was distinctly heard by several persons present.

TABLE NO. X.—*Uterine Fibroids.*

Name	Age	Para	Presentation	Duration of Pregnancy	Child	REMARKS
M.A.P.	21	2nd	Vertex	Term	A.	Fibroid=Size of Tangerine orange on anterior wall of uterus.
M. M.	25	1st	"	"	"	Small fibroid on fundus.
S. T.	36	"	—	—	—	Abortion in 10th week. See Auxiliary Report.
M. J.	35	"	Vertex	Term	A.	Fibroid tumour on left side of uterus. Underwent successful hysterectomy some months later.
M. C.	40	6th	Breech	"	"	Several small subperitoneal fibroids.
E.M.L.	25	3rd	Vertex	"	"	Large fibroid, involving left half of fundus.
J. B.	32	2nd	"	"	"	Two subperitoneal fibroids near fundus.
S. M.	22	1st	"	"	"	Small fibroid projecting from fundus.
B. H.	35	4th	"	8 months	"	Forceps. Fibroid = cricket-ball on anterior wall of uterus.

TABLE NO. XI.—*Morbidity.*

Temperature	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
100·8° to 101·2°	4	1	2	6	1	2	2	3	2	2	3	3	30
101·2° to 102·2°	1	4	2	4	1	1	3	2	3	5	4	4	34
102·2° to 104°	1	1	4	4	4	5	1	2	3	1	3	5	34
104°	1	—	—	1	—	—	1	—	—	—	1	1	5
Total per month	7	6	8	15	6	8	7	7	8	8	10	13	103
Percentage per month	6·30	4·25	6·15	12·71	4·68	5·54	4·34	4·34	5·67	5·71	7·63	9·42	6·27

MORBIDITY.

Of the patients under the first heading—viz., 100·8°–101·2°, twelve had a single elevation of temperature and received no

treatment. The remainder were mild cases, yielding readily to douching, curetting, &c. One was a case of syphilis. In two instances the patient had given birth to a macerated fœtus; in one case the patient had a fibroid uterus; *post-partum* hæmorrhage occurred in one case. A puerperal ulcer was once present. In two instances the pyrexia followed manual removal of placenta. Five cases are included in the sub-table. Between 101·2° and 102·2° there were seven cases with one or two elevations of temperature, and requiring no treatment; in two cases the pyrexia followed the birth of a macerated fœtus. In one case of forceps delivery a single elevation of temperature occurred thirty hours subsequently. In three cases *post-partum* hæmorrhage had occurred. Two are referred to sub-table.

Between 102·2° and 104° F. there were five cases in which forceps delivery had become necessary; one of these is mentioned in detail under the heading Incomplete Rupture of the Uterus. In another, when the temperature was falling, jaundice developed. Accidental hæmorrhage preceded the pyrexia in one instance; and in one, manual removal of placenta. In the case of a patient delivered in the Lodge, deep laceration of vagina and perineum occurred, requiring five sutures. Nine cases are referred to sub-table. In two cases, abortion and hydramnios, respectively, had occurred.

In the case of J. D., aged twenty-one, 1 para, the head was arrested in the pelvic cavity, owing to rostrate deformity in a woman whose history and aspect gave evidence of very bad health. On the second day the temperature rose to 103·6°, and in spite of treatment the pyrexia continued. Signs and symptoms of peritonitis followed, and patient died on the 16th day. . . .

In eleven of the septic cases convalescence was established within ten days, sufficiently to allow of the patient's discharge. In five instances the temperature rose above 104° F. In one a puerperal ulcer was present. One patient having had an incomplete abortion at home, was admitted to hospital with a temperature of 99·4°.

In the case of A. C., 3-para, the temperature rose on the fourth day to 100·8°, and on the following day to 104°. Uterus curetted and douched, when it was observed that the

posterior vaginal wall presented several small, yellow elevations very similar to what had been observed during her stay in hospital sixteen months previously, and which are described and figured in my Report for last year. In spite of assiduous antiseptic treatment, local and general, a high range of temperature continued with the development of troublesome cough and the physical signs of pulmonary phthisis. She took nourishment freely and slept well; the vaginal conditions showed great improvement, but no change for the better was observable in the lungs at the time of her discharge from hospital. I am strongly of opinion that this was a case of tuberculosis of the vagina.

The case of S. D.—Patient admitted with a temperature of 103° and the physical signs of pneumonia at base of left lung. Delivery did not take place till several days later, and defervescence occurred by lysis; and patient was discharged, well, at the end of three weeks.

In the case of M. K., manual removal of placenta was required, on account of hæmorrhage and morbid adhesion. Rigors and pyrexia occurred on fifth day, and a tardy convalescence followed, the patient not being fit for discharge till the third week.

SUB-TABLE OF MORBIDITY.

Chronic Bronchitis and Asthma	..	..	1
Influenza	..	..	3
Ischio-rectal Abscess	..	..	1
Mania	..	..	1
Mastitis	..	..	8
Peritonitis during Pregnancy	..	..	1
Pneumonia	..	..	2

TABLE NO. XII.—*Prolapse of Funis.*

Name	Age	Para	Date	Period of Pregnancy	Result to Child	Presentation	Remarks
1. S. M.	20	III.	Apl. 26	Term	A.	Vertex and hand	Version.
2. H. M.	38	X.	Mar. 6	—	D.	Head & foot	Version; with difficulty, owing to entire absence of liquor amnii. Placenta found in lower uterine segment adherent.
3. P. K.	24	I.	May 19	8½ months	D.	Vertex	Cord pulseless on admission; no interference.
4. K. P.	21	I.	July 27	Term	A.	„	Forceps.
5. A. H.	38	V.	Jan. 12	„	A.	„	Forceps.
6. B. D.	20	I.	Sept. 14	„	D.	„	Cord pulseless; craniotomy.
7. B. C.	25	II.	Dec. 17	8 months	D.	Footling	Cord pulseless when diagnosed.
8. M. M.	28	II.	Aug. 19	Term	A.	Breech	Foot brought down, and child delivered in asphyxia livida.

ACUTE YELLOW ATROPHY OF LIVER.

CASE—J. M., aged forty, a large, fair-complexioned woman, well nourished, was admitted on March 20, 1902, at 4 p.m. Pulse 100; temperature 99·8°. For several weeks previously, at irregular intervals, bleedings had occurred sufficient to cause marked loss of colour. The os admitted one finger, and the fundus was up to umbilicus, showing a degree of uterine enlargement inconsistent with the patient's belief as to the period of pregnancy. Very trifling discharge occurred during the succeeding thirty-eight hours, and on the forenoon of March 22, after a vaginal douche, eight laminaria tents were passed into cervix and a vaginal tampon was inserted. Three hours afterwards a rigor occurred; and some hours later, owing to bleeding, the tampon and tents were removed, and the uterus emptied partly by the finger, and partly with the flushing curette, of a large, vesicular mole. The bleeding ceased for some time, but later recurred, and was checked by injections of ergot.

The patient did not rest well, complained of sickness and thirst, but was able to retain a good quantity of milk. On passing the catheter a few drops of dark-coloured urine were removed. At the approach of daylight, about 6 30 a.m., her face showed a distinctly jaundiced hue, which became more pronounced through the day, and was attended with very alarming evidences of failing strength, weak, intermittent pulse, and slow, irregular respirations. Pain in head and back and tenderness over surface of belly were complained of. The area of liver dulness was not diminished, but pressure over it caused pain. At 1 o'clock two pints of saline solution were injected into left arm; and though this was followed by a transient improvement in the pulse, her condition became steadily worse, and death, preceded by a rigor and state of unconsciousness, took place about 5 o'clock p.m. A former pregnancy had ended in the formation of a vesicular mole; but a living child had been born about two years before her last illness.

Dr. Earl has furnished me with the following report:—

“The heart was normal; the lungs were slightly cedematous and showed hypostatic congestion. The abdominal organs were normal except the liver and kidneys. The liver was not diminished in size, was smooth on the surface and showed marked bile staining. A number of purple patches were seen under the capsule, and similar patches were seen on the cut surface of the liver. These were of irregular shape and varying size, none larger in area, as seen from the surface, than a sixpence. The common bile duct was quite normal, as were also the cystic and hepatic ducts. The duodenum was examined with care, and found to be quite normal. The gall-bladder contained a little bile, but no gall stones. The kidneys were somewhat larger than normal, but their capsules were not adherent. They presented a few purple patches similar to those seen on surface of liver, but smaller. The left kidney had two ureters, which came off from separate pelves, and opened separately about a quarter of an inch apart into the bladder. The uterus showed no pathological condition. All the organs showed more or less bile staining, as did the pericardial fluid and the blood serum. The microscopic examination of the liver and kidneys gave the following results:—

“*Liver*.—In the purple patches above alluded to the capillaries were greatly dilated and filled with blood, the liver cells being more or less deformed by pressure, but not degenerated. These purple patches were generally larger than a lobule of the liver,

and did not bear any fixed relation to the intralobular veins. The liver cells generally were normal in appearance, except that many of them contained more or less bile pigment. The bile ducts and blood vessels seen in microscopic sections appeared quite normal. There were no hæmorrhages in the liver.

"*Kidneys.*—The purple patches were found to be due partly to dilated capillaries, and partly to small hæmorrhages into the interstitial tissue, not into the renal tubes. The glomeruli were normal; only one was in a state of fibrous degeneration. There was an albuminous exudation into Bowman's capsules and into many of the renal tubes. Many of the latter contained hyaline casts, and some contained shed epithelial cells, and occasionally shed epithelial cells, and occasionally leucocytes and red blood corpuscles, but the latter were very few. The epithelial cells contained numerous coarse granules of an albuminous nature and occasionally fat drops. The vessels of the kidneys appeared normal, and there was no increase in the interstitial tissue."

POST-PARTUM HÆMORRHAGE.

During the year forty-six cases of *post-partum*, including three of secondary, hæmorrhage were under treatment. In thirty-one instances the bleeding took place during the third stage, and in twenty-one of these manual removal of the placenta was found necessary.

In the case of B. C., on the seventh day of a perfectly normal puerperium a considerable hæmorrhage took place, which was promptly checked, but left the patient very weak. Some hours afterwards the uterus was explored and some placental tissue was removed. Some pyrexia followed, lasting for two days, and retarding convalescence for a week.

M. C., 5-para, affected with hydramnios, was delivered on Nov. 22, and five days afterwards some hæmorrhage occurred, but ceased after the removal of some decidual fragments with flushing curette.

M. M., 5-para, was delivered on Jan. 21, and suffered from slight *post-partum* hæmorrhage. On the fifth day there was a recurrence attended with rise of temperature. On exploring the uterus a polypoid projection was felt, so firm as to admit of only partial removal with curette; notwithstanding, a favourable though tardy recovery followed.

ECLAMPSIA.

Five patients during the year, either before or very soon after their admission, were attacked with convulsions, and two of the number died, being indeed in a hopeless condition when they first came under our care.

CASE I.—M. D., aged twenty-six, 1-para, had three fits before admission to hospital, and a fourth very soon after. Half a grain of morphin was given and a vapour bath, and the latter was repeated twice subsequently. Two days later labour came on, and she delivered herself of twins, both dead. Some *post-partum* hæmorrhage occurred, but was easily checked. She had three fits before admission and ten subsequently. Some of them lasted from four to six minutes, and in the intervals she was sometimes very violent, shouting loudly and throwing herself about.

She enjoyed an excellent convalescence, and has since been safely delivered in the hospital of a healthy, living child.

CASE II.—B. M'L., aged nineteen, 1-para, unmarried; admitted from North Dublin Union in an unconscious state, numerous fits having already occurred. Uterus size of six months' pregnancy, but no attempt at uterine action. Half a grain of morphin was given, a vapour bath, followed by croton oil, and saline transfusion, to two pints, a small quantity of blood being allowed to flow previously. In spite of these measures, from the time of her admission till her death at 2 o'clock a.m., there was but little cessation in the convulsions, the interval between them seldom lasting more than a few minutes.

Reference to my previous Reports will show that, hitherto, very favourable results have followed the line of treatment adopted in the above-mentioned cases. Saline transfusion I have not tried before, but many instances of its successful use in eclampsia have been recorded by others. The patients who died were in a hopeless condition at the time of their admission to hospital; but on reflection, I regret that, in the case of J. M., 9-para, I did not try the effect of free venesection before performing transfusion; and possibly forcible dilatation of the cervix and rapid emptying of the uterus, combined with these measures, might have given different results. In connection with this very important subject I may be allowed to refer to the researches of Dr. Earl (then acting as

Pathologist to the Rotunda Hospital). into the structural changes in the liver, in severe cases of eclampsia. These were the first observations of the kind made in the United Kingdom, and have a special interest for us in the present day, when (as I believe) an unwise suggestion has been put forward that these cases have sometimes a renal, sometimes an hepatic, origin.

CASE III.—J. M., 9-para. At time of admission, 1 o'clock p.m., patient unconscious; very slight dilatation of os. Pregnancy in the sixth month. Head presenting; not fixed. Urine very scanty, the colour of porter, and containing a quantity of blood and albumen. Eight fits had already occurred, so $\frac{1}{2}$ gr. morphin was given, followed by a vapour bath, and a dose of croton oil. During the succeeding two hours' five very long fits occurred, and a $\frac{1}{4}$ gr. morphin was given. Delivery took place at 9 p.m. the same evening without any improvement in the patient's condition, and profound coma, with very high pulse and temperature, ended in death shortly after. Two hours before death two pints of saline solution were injected into patient's arm.

CASE IV.—Kate B., aged twenty-three, 1-para. At time of admission her pale, puffy face and swollen extremities attracted attention, as also her slow, hesitating manner in replying to questions. She complained of headache, pain in back and lower belly, and sickness of stomach. About one hour subsequently an eclamptic fit occurred, when she was immediately given $\frac{1}{4}$ gr. of morphin, and kept for twenty-five minutes in a vapour bath, during the administration of which she became very hysterical. About two hours later, she complained of dimness of vision, and another $\frac{1}{2}$ gr. of morphin was given. The urine becomes nearly solid when boiled. In three hours later she was delivered of a small living infant. The placenta showed numerous patches of degeneration.

CASE V.—F. H., aged thirty-four, 1-para. First stage was unusually prolonged, the pains being very feeble and irregular. When the second stage was well advanced a change in the patient's manner and mode of speech attracted attention, and without any other warning a fit occurred. Labour was immediately terminated by aid of the forceps; morphin ($\frac{1}{4}$ gr.) was then given and repeated in two hours. There was no recurrence of the fits, and the convalescence was uneventful, though wakefulness was sometimes troublesome.

BREECH PRESENTATIONS.

Born alive	37
Born dead	7
(Two premature, one prolapse of funis. Two accidental hæmorrhage, one in locked twins)	
Macerated	2
Assisted	37
Unassisted	7
Impacted	1
Total	45

During the year forty-five cases of presentation of the lower pole occurred, in thirty-six of which a living child was born. Of the stillborn children two were macerated, two were premature, two were associated with accidental hæmorrhage, one complicated by prolapse of the funis, and one (in a case of locked twins) underwent decapitation. In seven instances delivery was unaided. Prolapse of the funis occurred in one case, in which a living child was born. One case of impacted breech is to be recorded. Traction in the groin proving insufficient, a leg was brought down and delivery completed. Mother and child did well.

In one of the cases (B. D., aged thirty-six, 7-para) complicated with accidental hæmorrhage (concealed) the patient at time of admission was collapsed; the membranes unruptured; os size of two shillings, and labour pains very slight. The patient's aspect was wretched, and the urine highly albuminous. The vagina was tamponed and a binder applied. In three and a half hours later the natural efforts completed delivery. In a few days the urine was found free from albumen.

FETAL ABNORMALITIES.

Among these we had three cases of anencephalic foetus, one associated with hydramnios, and one being a twin. In the case of hydramnios the presentation was oblique. Hydrocephalus was met with twice, and in one case increased palpably for a few days after birth. Spina bifida was also present in two children, both born alive. The deformity was situated in the lower dorsal and lumbar region in one; and in the other in the dorsal region only. The latter was

associated with talipes, and the mother had hydramnios. Talipes was present in four cases. Two children had supernumerary fingers, in each case present on both hands. Five cases of cephalhæmatoma were noted, four of which occurred in unaided labours. One case of hare-lip and cleft palate occurred; and in three, subconjunctival ecchymosis was present; both eyes being affected in two of the number. One child was born alive with five coils of funis round the neck. In one instance the funis measured 42 inches. One infant was affected with the rare condition termed sclerema. Seven cases of ophthalmia came under observation, none of them severe; in four cases only one eye was attacked. Three cases of pemphigus, none of them severe, occurred amongst the infants.

MATERNAL SKIN AFFECTIONS.

As in former Reports, we have to record several cases, illustrating the two forms of erythema, occurring amongst parturient women, and which are scarcely mentioned in most obstetric works. One well-marked case of molluscum contagiosum came under notice in a multipara aged thirty-six. Chloasma uterinum was present in an unusually marked degree, forming large, brown patches on the wrists, forearms, and nipples of a healthy multipara, aged twenty-eight. Urticaria was once observed. Herpes occurred in three patients, once on the breast and twice on the lips. Relapsing pemphigus, present on the legs only and during many months of the pregnancy, was observed in one case. Four patients suffered from acne, which they alleged was always aggravated during menstruation and pregnancy. Two patients presented accessory nipples.

PUERPERAL APHASIA AND APHONIA.

Last year I was so fortunate as to be able to lay before the Academy, with much fulness of detail, an account of the first case of puerperal aphasia which has been reported in this country. Invaluable aid in doing so was given me by two of my resident pupils, one of whom, Dr. Wilson, of Aberdeen, was good enough to visit the patient at her home some months after her delivery, and was thus able to give

me an accurate account of her condition at that time. When my report was read a member of the Academy objected, in my opinion without any show of reason, to the case being described as "puerperal aphasia." This woman has recently been delivered of her second child under conditions almost identical with those which attended her first illness, and thus the correctness of my description has been abundantly verified. On the present occasion I wish to draw attention to a condition of aphonia which I have observed, attendant on childbed, in two cases especially. Both women were multiparæ, in good health—one of them especially so—and both averred that they were only thus affected during pregnancy, and recovered their ordinary voice shortly after its conclusion.

MANIA.

CASE I.—S. C., aged twenty, 1-para; normal labour; became maniacal on the second night, and temperature rose to 103°. Hyoscin bromide was given; uterus douched and curetted. Soon afterwards pulse and temperature fell, and mania ceased.

CASE II.—J. M., aged twenty-four, 3-para. Patient drunk on admission and bleeding profusely; two months pregnant. Uterus was emptied; the following day delirium tremens developed, and within 24 hours patient became insane and so violent that her removal to a hospital for mental cases was deemed necessary.

A PHYSICIAN HONOURED.

DR. GEORGE C. PARDEE has been elected to the position of Governor of the Commonwealth of California, U.S.A. We believe that this is the first occasion on which a physician has been called to preside over any of the Commonwealths of the Republic.

CARDIAC DILATATION AT PUBERTY.

DR. ALFRED FRIEDLANDER says the first requisite of treatment of this condition is rest; rest in bed, with the child flat on its back for several weeks. A light and nutritious diet, with the minimum quantity of fluid. Digitalis is often of value in the beginning, and strychnia at all stages; but it is more important to lessen the work of the heart than to stimulate it.—*Interstate Medical Journal.*

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Prize Essay on the Erection of a Sanatorium for the Treatment of Tuberculosis in England. Together with a Preface by the Chairman of His Majesty's Advisory Committee, a number of Appendices, Illustrative Plans, and a Bibliography. By ARTHUR LATHAM, M.A., M.D. Oxon., M.A. Cantab., Assistant Physician and Lecturer on Practical Medicine at St. George's Hospital, Assistant Physician at the Brompton Hospital for Consumption and Diseases of the Chest, &c.; in association with A. WILLIAM WEST, Architect, Honorary Deputy Treasurer of St. George's Hospital. London: Baillière, Tindall & Cox. 1903' 8vo. Pp. xx. and 254.

THE title of this work as given above conveys an adequate idea of the scope of its contents. It is an analytical review of the book in abstract. The circumstances which led to the writing of the essay may not be familiar to all our readers, so that the following information may be of interest. In the first week of January, 1902, an advertisement announcing the competition for essays and plans for the erection of a sanatorium for tuberculosis appeared in twenty-two medical papers in the capitals of Europe and America. The advertisement ran as follows:—

“Prize Essay for the Erection of a Sanatorium in England for Tuberculosis. His Majesty the King has graciously consented to direct that the expenditure of a large sum of money which has been placed at his disposal for charitable or utilitarian purposes shall be devoted to the erection in England of a Sanatorium for Tuberculous Patients.

“His Majesty has appointed the following gentlemen as an Advisory Committee for this purpose:—Sir William Broadbent, Bart., K.C.V.O.; Sir Richard Douglas Powell, Bart., K.C.V.O.; Sir Francis Laking, K.C.V.O.; Sir Felix Semon, Sir Hermann Weber, Dr. C. Theodore Williams.

"It is intended to construct the Sanatorium on the best lines which past experience and original thought can suggest, and in order to obtain the most valuable opinions His Majesty has been pleased to approve that a sum of £800 be awarded in Prizes for the best Essays and Plans which may be sent in to the Advisory Committee, under the following [among other] conditions:—

"Medical Men of all nationalities may compete. The Papers may either be the work of a medical man or the joint production of a medical man and an architect.

"2. The Sanatorium is intended for 100 tuberculous patients—50 male and 50 female.

"3. Of the total number of beds, 88 will be assigned to the more necessitous classes, whilst 12 will be reserved for the well-to-do.

"4. The accommodation for all patients is to be comfortable, a separate room being provided for each. Superior arrangements to be made for the more wealthy patients.

"5. It may be taken for granted that the Sanatorium will be erected on an elevated and sloping site, with a sunny exposure, and well sheltered from cold winds. It will have a farm at a convenient distance, and be surrounded by extensive grounds, well wooded, and affording ample space for exercises of various kinds. The soil will be dry and permeable, and the water-supply abundant.

"6. The Sanatorium must be fitted with the latest sanitary arrangements, and equipped with all requirements for scientific research. Provision should also be made for the recreation of the patients.

"7. Economy in construction will be an important consideration, but it must not interfere with the reasonable comfort of the patients or the efficiency of the institution."

The object of the competition was to obtain information as to the relative advantages of the various structural arrangements which have been employed in existing sanatoria, and to elicit new ideas which might be turned to advantage in the construction of "The King Edward VII. Sanatorium" so as to make it as perfect as possible.

That the competition was keen is apparent from the fact that the number of essays sent in was 180. With the

approval of His Majesty the King, the result of the competition was announced in the medical papers on August 8, 1902.

Money prizes of £500, £200, and £100 respectively were awarded to three essayists, and four other competitors were honourably mentioned. Of the three prize-winners the first was Dr. Arthur Latham, of London, with whom was associated as architect Mr. William West, also of London. The authors chose a Shakespearian motto: "Give him air; he'll straight be well." The second prize was awarded to Dr. F. J. Wethered, of London, whose motto was the King's historic epigram: "If preventable, why not prevented." With him were associated as architects Messrs. Law and Allen, of London. The third prize fell to the lot of Dr. E. C. Morland, of Croydon, whose motto was "*Vis medicatrix Naturæ.*" With him was associated as architect Mr. G. Morland, also of Croydon.

Dr. Latham's essay is divided into two parts. In the first he discusses the principles which should be followed in the erection of a Sanatorium for the treatment of tuberculosis. Part II. is headed: "An attempt to carry out these principles by the construction of suitable buildings." The two parts occupy 142 pages. They are succeeded by a number of valuable appendices, of which the first presents us with a summary of the main features of the scheme. It contemplates the construction of a sanatorium on the separate-block system. Appendix II. shows the statistical results of treatment in forty-four open-air sanatoria, including twenty-three establishments for paying patients, sixteen establishments for the poor, and five for children. An immense amount of information is condensed into the remaining appendices, which number 18. In them we find mention of the few sanatoria which have been so far established in Ireland—Rossclare, now closed; Rostrevor, Altadore, Co. Wicklow; and the National Hospital for Consumption at Newcastle, Co. Wicklow.

The "Historical Introduction" gives us within the compass of a few pages a clear account of the literature of tuberculosis from the time of Hippocrates to the present date. A full and sympathetic reference is made, at page 5, to the

views held by Dr. Henry MacCormac, of Belfast, in the middle of the nineteenth century as to the preventability of consumption.

Dr. Latham quotes (at page 7) the essential principles of Hermann Brehmer's treatment of tuberculosis as follows:—

1. A life spent in the open air under conditions which give immunity from tuberculosis.
2. Complete freedom from any debilitating circumstances, or anything which may lead to an exacerbation of the disease.
3. Methodical hill-climbing as an exercise when the condition of the patient renders this advisable.
4. An abundant dietary in which milk, fatty food, and vegetables occupy an important place.
5. Various hydro-therapeutic measures.
6. Constant and unremitting medical supervision.

Brehmer also insisted on the necessity of providing facilities for both observation and research. His life's work was the prevention and cure of tuberculosis, and he must undoubtedly be regarded as the founder of the sanatorium treatment of the disease. The subject of the thesis which he wrote for his medical degree in 1856 was "Tuberculosis primis in stadiis semper curabilis." In 1859 he was permitted, owing to the influence of his friends Humboldt and Schönlein, to open a sanatorium at Görbersdorf, and in 1886 he published his well-known book.

"The main principle then running through the sanatorium treatment," writes Dr. Latham, "is to treat tuberculous disease on common-sense lines—in other words, to develop by every possible means the resistance of the body, so as to render the tubercle bacilli innocuous." He adopts Brehmer's essentials modified as follows:—

1. A continuous supply of pure fresh air with no unnatural variations of temperature.
2. The avoidance of re-infection and of all sources of irritation, such as dust.
3. Good nourishing food in sufficient quantity to establish and to maintain the normal body-weight of the patient.
4. Constant supervision by a skilled physician, who so

orders the patient's life that he avoids everything which is harmful, and takes advantage of everything which helps the process of repair or develops the powers of resistance.

Part. I. of the work concludes with a tabulation of requirements for a sanatorium based on the foregoing principles (pages 64 to 67, inclusive), and Part II. applies the principles to the construction of suitable buildings for the proposed King Edward VII. Sanatorium. In this portion of the essay Mr. West's technical knowledge is cleverly interwoven with Dr. Latham's medical experience. The smallest details have not been overlooked, so that the whole forms a reliable guide to all who contemplate the construction of a sanatorium on the most approved principles, and on the separate-block system. At page 135 an alternative plan is explained in case either the character of the site or the amount of money at disposal prevents the separate-block scheme. It consists of a central portion and two wings—eastern and western. Both schemes are illustrated by numerous architectural plans.

The work closes with a very full polyglott bibliography, which was completed in March, 1902. It consists chiefly of references to books and articles on sanatoria and on the sanatorium method of treatment. On such subjects as disinfection and the infectivity of dust references have been given only to more important and recent articles.

In concluding this notice, we beg leave to express the opinion that the work should be consulted by all who are interested in the establishment of a modern, scientifically constructed, and efficiently equipped sanatorium for tuberculosis.

Biographic Clinics: the Origin of the Ill-Health of De Quincey, Carlyle, Darwin, Huxley, and Browning. By GEORGE M. GOULD, M.D., Editor of "American Medicine," Author of "An Illustrated Dictionary of Medicine, Biology," &c., "Borderland Studies," "The Meaning and Method of Life," &c. London: Rebman, Ltd. 1903.

THE writer of this interesting little volume has given strikingly demonstrative proof of his literary culture, his

scientific attainments, his vast range of reading and research, his rare powers of arrangement and comparison of physical and psychological data, his enthusiastic devotion to the advancement of professional knowledge, his philanthropic sympathy with the forms of human suffering which are too often looked on with indifference or even with derision, and his peculiar proficiency in the mode of investigation which of all others is the most important for the clinical observer and philosophic physician—the “method of Zadig.”

He has here placed before the inquiring eye of the curious observer satisfactory—to us, at least—solutions of some of the most interesting items of what we may, perhaps, be allowed to call literary pathology; the strange morbid symptoms, physical and psychological, of the highly-strung man of genius, which are connected with excessive ocular exercise in way of reading and writing. The names of five of the most interesting heroes, in the cultivation of literature and the advancement of science, are here placed before the reader; and selected facts are displayed from the annals of the life of each, which prove but too surely that the major part of his existence was no better than a continuous agony. It is sad to read of the forty or fifty years’ dyspeptic tortures suffered by Thomas Carlyle, Charles Darwin, and Thomas Huxley—each in his turn. The explanation was not even suspected in any of the cases; and even had an approximately accurate guess been made, the requisite means of relief would not have been forthcoming.

Dr. Gould entertains no doubt whatever that the initial factor in the production of the life-long martyrdom in each and all of his five cases was “*eye-strain*”; to the recognition of whose potency in such direction the world is indebted to another American medical genius, Dr. Weir-Mitchell. And he displays full and—to us—convincing reasons for the faith that is in him. The most important physical cause of such eye-strain is, usually, “*astigmatism*”; and the fact that this condition has been but recently recognised, made accurate diagnosis unattainable in any of the cases referred to in this interesting and instructive volume. The remedy for this abnormality is, necessarily, of more recent birth. We

will not enter into further details of criticism, as we wish that all our readers should examine this volume for themselves. They will find that not a line, or even a word, is wasted. All its sentences are artistically constructed; every one is illuminating; some seem almost inspired, and a few will, we trust, be found absolutely prophetic.

The volume has been published by the firm of Rebman, Limited, with characteristic good taste. The type and paper are so exquisite that they would both seem to have been selected as ideal examples of the use of the best available material for the prevention of "eye-strain."

We cannot close this very superficial and all too inadequate notice without specially thanking Dr. Gould for the opportunity which he has thus afforded us of perusing one of the most pleasantly instructive and unobtrusively original volumes that has fallen into our hands for many years.

The Nurse in Hot Climates. Revised and reprinted from "The Hospital" Journal. By EDWARD HENDERSON, M.D., F.R.C.S. Edin.; late of Shanghai, China. London: The Scientific Press, Ltd. 1903.

DR. EDWARD HENDERSON has now settled down in London practice laden with Oriental (intellectual) spoils, vast in quantity and select in quality, regarding the climate, external appearance, and internal human mechanisms of the now more especially interesting, and always most mysterious, land of China. The clearness of mental vision and the keenness of discrimination which Dr. Henderson has also brought back from the far East must originally have accompanied him there; but they present the enhancing value of the characteristics derived from the necessary fact that they have been mellowed by time, ripened by experience, and tempered by the manifold and varied results of severe practical tests.

In this neat and handy booklet of 47 pages, which presents the well-chosen feature of a flexible cover, Dr. Henderson has placed before the professional world the essence of the information gained in the course of his prolonged and varied experience regarding the functions of the

nurse in hot climates. We have read through its pages carefully from beginning to end; and, while thanking the author for the treat which he has afforded us, we not only congratulate him on the praiseworthy finish of his self-imposed task, but, still more so, ourselves on the opportunity we have thus gained of reaping the advantage of his instructive advice. We do not propose to give extracts: the volume is too small for such treatment. We, accordingly, close this notice by recommending all of our readers, who are interested in the study of the essential differences between the nursing of London and of Calcutta or Shanghai, to make themselves personally acquainted with the contents of Dr. Henderson's instructive and well-written little volume.

La Pré tuberculose et le Sanatorium de Banyuls-sur-Mer.

Par GEORGES LAFARGUE, Ancien préfet des Pyrénées-Orientales, Fondateur du Sanatorium du Banyuls. (Extrait de la *Lutte Antituberculeuse*, numéros de septembre et octobre, 1902. Paris: C. Naud, Éditeur. 1902. Pp. 47, with six illustrations.

IN this pamphlet M. Lafargue records the history of the foundation of the Sanatorium at Banyuls-sur-Mer for the treatment of children of tuberculous diatheses and the results obtained there since its inception in October, 1888. Situated in the Department of the Eastern Pyrenees on the Mediterranean coast, the Sanatorium contains accommodation for 200 children aged from four years to fourteen years. Most of the beds are occupied by patients nominated by the departments, municipalities, hospitals, charitable societies, or private benefactors. A few beds are reserved for those whose relatives can pay 2 francs a day pension.

The air space allowed per bed is 20 metres, which, though little enough in city hospitals, is considered sufficient in the pure atmosphere of the seaside. Treatment consists in the main in liberal diet, fresh air, and sea bathing. Though surgical treatment is resorted to, no details of work done in this direction are given. The mean duration of treatment in 1,139 cases was 447 days. While cases of active

pulmonary tuberculosis are not admitted, patients suffering from Pott's caries, tuberculous joints or bones, and scrofulous adenitis are treated, as are also cases of rachitis and anæmia.

It is claimed that 89·78 per cent. of the cases treated have been cured or improved by residence in the Sanatorium. M. Lafargue claims that the results obtained at Banyuls are superior to those obtained in similar institutions situated on the English Channel and Atlantic seaboard. He attributes this superiority to the mildness of the climate and the absence of sand-dunes at Banyuls, and also to the high amount of saline constituents in the waters of the Mediterranean (43·735 gr. per litre, as compared with 32·657 in the English Channel).

A Text-book of Surgical Principles and Surgical Diseases of the Face, Mouth and Jaws for Dental Students. By H. HORACE GRANT, A.M., M.D.; Professor of Surgery and of Clinical Surgery in Hospital College of Medicine; Professor of Oral Surgery in the Louisville College of Dentistry, &c. Illustrated. London and Philadelphia: W. B. Saunders & Company. 1902. Pp. 231.

THE object with which this book is written is that of presenting the dental student with a text-book which will explain succinctly the principles applicable to all operative procedures and discuss such surgical lesions as dentists may be required to diagnosticate, and perhaps be called upon to treat.

It is pleasing to note that bacteriology—a knowledge of which is the first fundamental principle underlying all modern surgery—has the first chapter devoted to its study. The subject is just as important to the dentist as to the general surgeon; consequently, we should have wished it to have been more fully dealt with. As to the amount of medicine and surgery dental students should be required to study different opinions may be entertained, but certainly we cannot say the student of dentistry will be compelled to study much that might be considered useless if he reads the book before us. In a book limited to a special sub-

ject such as this, we think the author might have devoted more space to the special surgical conditions with which a dentist may have to deal than to dilate upon such subjects as those of hare-lip, and a description of an operation for remedying the defect, or deformities of the nose, or a description of the Hartley method of removing the Gasserian ganglia—an operation which a dentist will never be consulted about or asked to perform, and the description of which, as given by the author, is too concise to convey much idea of the procedure. The book, however, is one which is worthy of perusal by those for whom it is intended. It is clearly written, and the publishers have produced it in their best style.

Ophthalmic Nursing. By SYDNEY STEPHENSON. Second Edition, with 62 Illustrations. London: Scientific Press, Ltd. 8vo. Pp. 191.

SOME time ago we reviewed the first edition. Now Mr. Stephenson's useful little book has reached a second edition, and, as the author states in his preface, he has made in it the alterations necessary to bring the text up-to-date, especially as regards new drugs and modern methods of sterilisation. He has also corrected some errors that had found their way into the first edition.

At first sight one would hardly think there was much room for a book on the subject, as the general training of a nurse should teach her most of what an ophthalmic nurse requires to know, but the book will be found of use by such nurses as are called upon to take charge of eye patients, as it gives particular directions regarding the care and sterilisation of drops and bottles, the use of eye-shades, and the post-operation care of patients.

A Manual of Ophthalmoscopy for Students and Practitioners. By J. E. JENNINGS, M.D. With 95 Illustrations, and one Coloured Plate. London: Rebman, Ltd. 1902. Pp. 180.

THIS manual, the author tells us in his preface, is an elabo-

ration of a series of lectures on ophthalmoscopy delivered in St. Louis. The author considers that there is a demand for a manual of ophthalmoscopy, adequately illustrated, which will give, in a small compass and at slight cost, information hitherto to be obtained only in expensive text-books and atlases.

The text is readable, expressed in good (though in places American) English, and the explanations are, for the most part, easy of comprehension. The black and white illustrations are, for the most part, good, but the coloured plate is rather crude. There is, of course, no attempt at originality in the matter of this book.

We can recommend the volume to those requiring such, and who have not the ability to acquire one of the larger and more complete text-books on ophthalmology, of which there are many.

Nothnagel's Encyclopedia of Practical Medicine. Volume IV.

Diseases of the Bronchi, Lungs, and Pleura. By PROFESSOR DR. FRIEDRICH A. HOFFMANN, Professor of Medicine in the University of Leipzig; PROFESSOR DR. O. ROSENBACH, of the University of Breslau; DR. E. AUFRECHT, Chief of Clinical Medicine in the Magdeburg Altstadt City Hospital. Edited, with additions, by JOHN H. MUSSER, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Authorized Translation from the German, under the editorial supervision of ALFRED STENGEL, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Philadelphia and London: W. B. Saunders & Co. 1903. 8vo. Pp. 1029.

IN his preface, Dr. John Herr Musser, the Editor of the fourth volume of the American Edition of Northnagel's great System of Medicine, explains that the additions made by him in his editorial capacity to the monographs which compose the volume include, among other things, some new matter on the anatomy and physiology of the bronchial tubes, on foreign bodies in these tubes, and on the pathology, bacteriology, and treatment of bronchitis. In the article on

"Fibrinous Bronchitis" the Editor has largely drawn upon an admirable paper by Bettmann, which appeared in the *American Journal of the Medical Sciences*, February, 1902. Bettmann gives all the references to the subject since Lebert's article in von Ziemssen's *Encyclopædia* in 1869.

The Editor's hand is seen also in the Section on Bronchiec-tasis, particularly in regard to the treatment of this condition. A. Fraenkel's views on the ætiology of asthma are quoted, at page 224, from "Die deutsche Klinik am Eingang des 20-ten Jahrhunderts," 4 Lieferung, 1901. Another interesting discussion in the article on Asthma is the relation of the eosinophile cells in the blood to the affection. In 1891 Schmidt's attention was called to the fact that not only the sputum, but also the nasal secretion, which was profuse after an asthmatic attack, contained very many eosinophile leucocytes.* After quoting von Leyden, A. Fraenkel, Mandybeer, and Neusser on the origin of the eosinophile cells in asthma, the Editor observes that all these authorities agree that while eosinophilic sputum is not pathognomonic of bronchial asthma, yet (as von Leyden says), on account of its frequent and constant association with bronchial asthma, the presence of eosinophilic sputum has some intimate relation with this form of disease.

A discussion is also introduced as to the relation of the so-called Charcot-Leyden crystals and the eosinophile cells. Von Leyden (*Deutsche med. Wochenschrift*, 1891, page 1085) even believes that the crystals originate at the cost of the eosinophile or Ehrlich cells. Cohn brought convincing proof in 1895 against the view that the Charcot-Leyden crystals are identical with the spermin crystals described by Böttcher, and Lewy (*Berl. klin. Wochenschrift*, August 13, 1900) assigns several reasons for concluding that the two kinds of crystals are not identical.

The large volume before us deals with four great subjects—the bronchi, emphysema and atelectasis, inflammations of the lungs, and diseases of the pleura. For the first two Professor Friedrich A. Hoffmann, the Professor of Medicine in the University of Leipzig, is responsible. Dr. Aufrecht takes the

* "Zur Kenntniss des Asthma bronchiale." *Centralblatt für klin. Medicin*, No. 25, 1891, page 473.

wide subject of inflammations of the lungs, and Dr. O. Rosenbach, of the University of Breslau, diseases of the pleura.

Professor Hoffmann's work is thoroughly German in its richness of detail. The *embarras de richesses* is, in fact, often perplexing, and even hinders that facility of reference to special points which is so necessary in a standard work on a given subject. The leisured physician who is devoted to study will, however, find in the Professor's monographs much food for thought.

To illustrate our criticism as to the minuteness of Professor Hoffmann's work we may state that, in the section on "Foreign Bodies in the Bronchi," there is a tabulated list of cases which extends to 31 pages. It is true that Dr. Hodge has collected the cases reported since the publication of Professor Hoffmann's original article, and added them to the table. The total number of cases tots up to something like 250, so that the topic is exhaustively treated.

In the Section on "Asthma," Dr. Hoffmann gives an account of "Hay-Asthma," a disease first described by Bostock under the name "Summer-catarrh"—not "Sommerkatarrh," as printed on page 228, for John Bostock was a London physician, who, in a paper read before the Medical and Chirurgical Society of London on March 16, 1819, described the malady as it affected himself. Numerous references to the literature of the subject are given, but curiously enough there is no mention of Georg Sticker's masterly monograph which was published last year in the second volume of the American Edition of Nothnagel's *Encyclopædia*. The name of the distinguished Giessen physician is not once quoted, and yet his article strikes us as being the very best and fullest that has ever been written on "Bostock's Disease."

An important and valuable application of the Röntgen rays in physical examination is illustrated at pages 304 and 305 in the article on Emphysema of the Lungs. "In the text-books," writes Dr. Hoffmann, "it is found stated that the diaphragm can be depressed to such a point that the convexity is directed downward, and the diaphragm during contraction acts as an expiratory muscle. I believe this is a purely theoretic conclusion, and I do not believe that life can continue if the diaphragm loses its power of acting as an in-

spiratory muscle. Until recently percussion was the only method available for the determination of the position of the diaphragm in the living subject, and that method of examination is clearly inadequate to act as a basis for such a daring assertion. Since I have begun to observe the diaphragms of numerous emphysematous subjects with the Röntgen rays, I have always found the dome of the diaphragm more or less distinctly flattened, but have never seen a perfectly flat diaphragm, far less one with its convexity directed downward " (page 305).

In this brief notice we can but quote Professor Aufrecht's classification of inflammations of the lungs—that is, non-tubercular pulmonary inflammations. It will be found at page 383, and is intended to embrace the various diffuse and focal diseases, which are inflammatory in their origin and course. The category includes :—

" I. DIFFUSE DISEASES OF THE LUNGS.

" 1. *Acute.*

" (a.) Croupous pneumonia.

" (b.) Catarrhal pneumonia (up to this time also designated as lobular pneumonia).

" (c.) Atypical pneumonia (up to the present also designated as infectious or bilious or asthenic pneumonia, or pneumo-typhus).

" (d.) Hypostatic pneumonia.

" (e.) Deglutition pneumonia.

" (f.) Desquamative pneumonia.

" (g.) Syphilitic pneumonia.

" 2. *Chronic.*

" (a.) Dust inhalation diseases.

" (b.) Pulmonary induration (*Pneumonia fibrosa chronica*, cirrhosis of the lung).

" (c.) Carcinoma of the lung.

" II. FOCAL DISEASES.

" (a.) Abscess.

" (b.) Gangrene.

" (c.) Embolism.

" (d.) Infarct."

The term "genuine desquamative pneumonia" needs explanation. It was given by Buhl to a peculiar form of pneumonic consolidation (usually) of the apex, which was or was not preceded by hæmoptysis, but in which the characteristic pathological condition was a complete filling of the alveoli with swollen "epithelia." Buhl considers that the sputum affords grounds for the diagnosis of "desquamative pneumonia." Microscopic examination shows that it abounds in shed alveolar epithelium. Aufrecht is not prepared to accept this view. He suggests that the absence of the *Diplococcus pneumoniae*, or its presence in small numbers, is a criterion for the diagnosis, if the other objective and subjective symptoms of desquamative pneumonia are present. The condition is either primary or consecutive to hæmoptysis or an already existing tubercular affection of the pulmonary apex.

Another notable section is that on syphilitic pneumonia, under which heading three kinds of syphilitic inflammations resulting from acquired as distinguished from hereditary syphilis have to be defined—namely, gumma, changes in the connective tissue, and parenchymatous changes. Aufrecht describes some striking examples of congenital white pneumonia—syphilitic pneumonia of the newborn. He says that the macroscopic appearance is aptly described by the term *pancreatisation du poumon* introduced by Rogers and applied by Lorain and Robin to cases which they published in the *Gazette médicale de Paris*, 1855, No. 12, page 186.

To the article on Inflammations of the Lungs the Editor appends a valuable "Note" on the surgical treatment of some pulmonary affections.

A monograph on "Diseases of the Pleura" by Dr. O. Rosenbach, of Breslau, brings the present volume to a close. The author arranges the subject under two headings—A. Acute and chronic inflammation: tumours; B. Pneumothorax. This article occupies 216 pages, a fact which will give some idea of its richness of detail. Speaking of the treatment of pneumothorax by diet, the author considers that no advantage is to be derived from any form of *Mastcur*—the German equivalent for "gavage," excessive or forced feeding.

The fourth volume of this fine work fully maintains the reputation of Nothnagel's *Encyclopædia of Practical Medicine*.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF SURGERY.

President—L. H. ORMSBY, P.R.C.S.I.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, January 23, 1903.

Surgery of the Gall-Bladder.

MR. M'ARDLE brought forward a number of cases to illustrate, first, the method of applying sutures to the gall-duct before opening over a stone impacted therein, thus rendering the procedure of very short duration; secondly, instances of gall-stones simulating cancer of the stomach where operation effected a complete cure; thirdly, cases where adhesive bands joined the colon to the gall-bladder and liver, producing dilatation of the stomach; fourthly, tumour of the gall-bladder leading to symptoms simulating chest trouble, dyspepsia, and inducing mental distress. In all of these, the proper treatment of the gall-bladder was thoroughly effectual in relieving the patient of the secondary troubles which were so distressing.

MR. FAGAN said, in regard to Case III. of Mr. M'Ardle's paper on surgery of the gall-bladder, that the patient, middle-aged, had suffered for five years from severe epigastric pain and vomiting. Seen by him in September, 1901; case had then been diagnosticated in London as cancer of pylorus. On examination stomach dilated upwards, displacing apex beat of heart; downwards, reaching umbilicus to left, two inches to right of middle line. A narrow, dull area lay to right of this, and still more to right a second resonant area

(combined percussion and auscultation method was used). Gave Ewald's test meal, and had gastric contents examined at the Laboratory of Trinity College. HCl and pepsin pronounced present in normal amounts. Hence the diagnosis referred to, and the recommendation to have an operation done.

SIR THOMAS MYLES said the difficulties of diagnosis in cases of gall-stones without jaundice were often very great. He described a case in which a lady, aged thirty-four, subject to violent attacks of pain, had been brought to him by Dr. Rice, of Portarlington. Examination showed a greatly dilated stomach and a floating kidney. He was at first inclined to attribute the symptoms to the floating kidney, but determined, after consultation with Professor Dwyer, to make an exploratory incision in the middle line. This was done, and an elongated tube like gall-bladder more than nine inches in length was brought into the wound, opened, and 98 small white calculi removed therefrom. Sir Thomas Myles asked Mr. M'Ardle for his views on the question of complete closure of the gall-bladder in these operations and the frequency of ventral hernia after suture of gall-bladders to parietes.

The Section then adjourned.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—D. J. CUNNINGHAM, M.D.

Sectional Secretary—W. TAYLOR, F.R.C.S.I.

Friday, February 6, 1903.

PROFESSOR ALEC FRASER, M.D., in the Chair.

Specimens.

DR. E. H. TAYLOR, showed two specimens of the new-born infant to demonstrate the topographical anatomy of the stomach, and other abdominal viscera.

X-Ray Photography and Structure of Bone.

DRS. E. H. TAYLOR and E. J. WATSON made a communication on the value of X-Ray photography in connection with the structure of bone. Dr. Taylor dwelt specially on the temporal bone in connection with operations for the results of suppurative middle-ear disease. Dr. Watson exhibited many beautiful skiagrams showing the structure of different bones.

Congenital Absence of the Left Lateral Half of the Diaphragm.

PROFESSOR FRASER showed two cases. The one case occurred about the fourth month, in a male foetus, which was otherwise perfectly normal. The under surface of the left lung lay upon the suprarenal capsule, the stomach and the left lobe of the liver. The left free margin of the central part of the diaphragm ran as a strong band from front to back, slightly external to the pericardial sac, and above the left suprarenal capsule and kidney. The other case occurred in a full-time female foetus, and was only one of many abnormal features present. The lungs were well developed, and the right pleural cavity was perfect. The left contained the lung, several coils of the small intestine (which was well developed), and the left lobe of the liver projected into it. This cavity also communicated with the pericardial sac, the upper half of the left wall of this sac being absent. Between the two pleural sacs dorsal to the heart, but more to the right than to the left, a large cavity was found containing a well-developed stomach, pancreas and spleen. This cavity communicated with the general abdominal one through an aperture in the position of the foramen of Winslow. On slitting open the cavity of the mouth and pharynx on the left lateral aspect, it was found that there was no oesophagus present, the lower part of the pharynx expanding into the cardiac end of the stomach, which, as has been already stated, lay dorsal to the heart between the two pleural sacs. The colon lay entirely to the left of the middle line of the body.

*The Anatomy of the Skull, Stereoscopically Demonstrated by
"X-Rays."*

After some introductory remarks, Dr. Haughton referred to the difficulty of interpreting a "single skiagram," and said it required a long apprenticeship to such negatives before accuracy could be arrived at. The difficulty of "reading" a "single skiagram" arises from several causes. The "X-ray" picture is an example of uniplanar projection of multiplanar objects. This causes superposition of shadows. Then "X-rays" being a diverging cone causes magnification and obliquity distortions. These sources of inaccuracy in the "single picture" were all used up and eliminated by the beautiful stereoscopic method of Röntgen photography first described by M'Kenzie-Davidson. By this method a reproduction of the skull could be produced, perfect in contour and perspective. Dr. Haughton then showed by diagrams on the blackboard how all these sources of inaccuracy were elimi-

nated in the stereoscopic method ; and afterwards, in the reflecting stereoscope, showed prints of the skull-base and lateral views, in which the following points were well demonstrated:—*Relations* of groove for lateral sinus to mastoid air cells, mastoid emissary vein, internal auditory meatus, external auditory meatus, cochlea, semi-circular canals, canal for internal carotid artery, foramina in base of skull, air cells, sphenoid, ethmoid, frontal sinus, antrum of Highmore, turbinated bones, vomer, dentition (unerupted bicuspid and wisdom teeth), clinoid processes, grooves for middle meningeal artery, &c. Dr. Haughton mentioned that this was a preliminary communication on bone structure in man and the lower animals, which he hoped to bring before this Section later on in the Session.

The Section then adjourned.

SPECIFIC NATURE OF SNAKE VENOM.

DR. TIDSWELL finds that the serum of Calmette, obtained from horses inoculated with cobra venom, is not efficient against the venom of Australian snakes. Even when used in large doses, it failed to react against a single lethal dose of the poison of the tiger snake. Serum obtained, however, from horses inoculated with tiger snake venom was found to be effective against the lethal doses of that poison, but not so towards the poison of the Australian black or brown snake or the puff-adder. In fact, the experiments of the author show that the anti-venomous serum is active as a remedy only against the specific poison which has been employed in its production, and that the antitoxin from the venom of one species of snake is ineffective as a remedy for the bite of another kind.—*Austral. Med. Gaz.*

CYCLIC VOMITING IN CHILDREN.

SIGNOR VALAGUSSA concludes from cases observed that recurrent vomiting occurs in children who have inherited the uric acid diathesis. The disease forms a part of the pathology of metabolism, and should be considered as absolutely distinct from diseases of the gastro-intestinal tract. The vomiting occurs at irregular intervals, and is decidedly influenced in both duration and severity by treatment. The disease is not a morbid entity, but a complex syndrome, of which the vomiting is the chief symptom.

DUBLIN UNIVERSITY BIOLOGICAL ASSOCIATION.

President—T. PERCY KIRKPATRICK, M.D.

Honorary Secretary—HENRY STOKES, B.A.

Thursday, February 5, 1908.

The Physiological Surgery of the Alimentary Canal.

PROFESSOR W. H. THOMPSON read a paper on the "Physiological Surgery of the Alimentary Canal." This very interesting paper was a concise account of Professor Pawlow's recent extensive experiments on the digestive glands of the dog. This eminent Russian physiologist carried out all his experiments in accordance with the rules of aseptic surgery; and so his dogs lived in comfort for years while he fed them with various food-stuffs and noted the results. His researches on the stomach were more elaborate; and these Professor Thompson illustrated by lantern slides. He found the following interesting facts:—

1. The quantity of juice varies directly with the quantity of food, and the outflow remains as long as any food remains in the stomach.

2. The digestive power of the juice is greatest during the first hour, then somewhat declines, remaining at this level till near the end of digestion, when it usually shows a slight rise.

3. The juice called out by bread is much stronger than that for flesh, and this again stronger than that for milk, which is only about a quarter the strength of the bread-juice; and so the type of the juice is modified by the diet; and if one diet be long continued it is hard to alter the character of the juice on changing this diet.

4. The juice secreted at the beginning of a meal is the same whether the food is merely shown to a hungry animal or chewed and swallowed without being allowed to enter the stomach, and in both cases more active and copious than when directly introduced into the organ without the animal's cognisance. Hence the value of appetite as a factor in digestion.

With regard to the pancreas, he found that the quantity and quality of the juice varied with the diet; while his experiments on the liver brought out many new facts, some of which were:—

1. The quantity of bile poured out runs parallel with the quantity of pancreatic juice.

2. The steapsin of the pancreatic juice was not active till the bile reached it, while the succus entericus put the trypsin in action.

3. The pylorus remains closed as long as the reaction of the duodenal contents is acid; while the acid produces a substance in the duodenal cell, which is absorbed and stimulates the pancreas to secrete.

Professor Thompson brought the paper to a close by saying that Professor Pawlow thought no laboratory complete without a set of prepared dogs on which these experiments could at any time be performed.

The President, Sir Charles Ball, Dr. Haughton and Dr. Oram, with Messrs. Pringle, Harvey, Robinson, and Gogarty, having spoken, Professor Thompson replied, and the meeting adjourned.

URINE IN TYPHOID FEVER.

DR. ABT (*Medical News*), in 90 specimens of urine representing 15 cases of typhoid fever, 17 specimens representing 5 cases, showed the presence of the typical typhoid bacillus. In 18 specimens varieties of the *Bacillus coli* and of the typhoid germs were found. The typhoid bacilli have been found as early as the beginning of the second and as late as the forty-fifth day. In some cases they may occur in such small numbers as to escape detection, and in others may be found in such large numbers as to render the urine turbid.

AIR PHOTOGRAPHY.

THE sanitary authorities of San Francisco are engaged in taking photographs of the air of that city, with the intent of discovering the condition of the air in different districts of the city. Gelatine plates suspended at different heights, from one to six feet, are used for the purpose. Any germs present are caught on the plates and then developed. As soon as the culture is complete the plates with the germs are micro-photographed.—*Pacific Med. Journal*.

CENSUS OF THE CITY, OR COUNTY BOROUGH, OF DUBLIN, 1901.

THE following information is contained in a summary of the results obtained respecting the Capital of Ireland from the Census Returns of 1901 :—

The City, or County Borough, of Dublin covers an area of 7,911 statute acres, or 0·04 per cent. of the total area of the country.

The number of persons in the City of Dublin according to the Census was, in 1891, 268,650 ; and according to the recent Census, 290,638 (140,388 males, and 150,250 females), or 8·2 per cent. more than in 1891.

The number of distinct families in the city at the time of the late enumeration was 59,263, the average number of persons in a family being thus 4·6 ; and the number of inhabited houses was 32,061, showing an average of 8·6 persons to each house. In calculating these averages, the special inmates of public institutions have been omitted.

The number of occupiers (or heads of families) in occupation of less than five rooms in 1901 was 46,869, or 79·0 per cent. of the total number of families in the city, and of these 92 were occupiers of part of a room only ; 21,702, or 36·6 per cent. of the total number of families in the city, were occupiers of one room : 13,620, or 23·0 per cent., occupiers of two rooms ; 5,971, or 10·1 per cent., occupiers of three rooms ; and 5,484, or 9·3 per cent., occupiers of four rooms.

The number of tenements of one room in the city was 21,747, comprising 3,278 cases in which the room had only one occupant ; 13,320 where the room had 2, 3, or 4 occupants ; 4,576 cases in which there were 5, 6 or 7 occupants ; and 573 cases where the occupants exceeded 7 in number, including 47 cases of 10 persons, 13 of 11 persons, and 6 of 12 or more persons in the room. Of the persons enumerated in the city in 1901, 66·6 per cent. were born in Dublin City or County ; 16·2 per cent. in other Counties of the Province of Leinster ; 4·9 per cent. in Munster ; 3·5 per cent. in Ulster ; 2·0 per cent. in Connaught ; 5·5 per cent. in Great Britain ; 1·3 per cent. were born abroad ; and 42 persons were born at sea.

Of the total population of the city in 1901, 81·8 per cent. were Roman Catholics, 14·3 per cent. Protestant Episcopalians (Church

of Ireland), 1·4 per cent. Presbyterians, 0·8 per cent. Methodists, and 1·7 per cent. members of other Religious Denominations. In 1891 Roman Catholics formed 82·2 per cent.; Protestant Episcopalians (Church of Ireland), 14·4 per cent.; Presbyterians, 1·4 per cent.; Methodists, 0·7 per cent.; and members of all other Denominations, 1·3 per cent. of the population of the city as then constituted.

The following statement shows the educational status of the inhabitants of the City of Dublin in 1891 and 1901, in so far as relates to the degrees of elementary education relative to which inquiry was made on the Census Forms, the numbers on which the percentages are based being those for the city as constituted in the respective years:—

Degrees of Elementary Education.				Rate per cent. of Total Population.	
				1891	1901
Read and Write	-	-	-	69·1	75·7
Read only	-	-	-	6·9	4·6
Illiterate	-	-	-	24·0	19·7
Total	-	-	-	100·0	100·0

From the above it will be seen that whereas, according to the returns of 1891, only 69·1 per cent. of the inhabitants, at all ages, could "read and write," in 1901, 75·7 per cent. could do so; that the percentage of the population who could "read only" in 1891 was 6·9, and in 1901, 4·6; and that the percentage of the "illiterate" fell from 24·0 in 1891, to 19·7 in 1901.

In 1891, 14·5 per cent. of the inhabitants aged five years and upwards were illiterate (13·0 per cent. of the males, and 15·8 of the females); in 1901, the percentage was but 10·1 (9·0 of the males, and 11·1 of the females). Taking religious professions and education in combination, it appears that in 1901, excluding children under 5 years of age, 11·5 per cent. of Roman Catholics, 3·3 per cent. of Protestant Episcopalians (Church of Ireland), 1·9 per cent. of Presbyterians, 2·0 per cent. of Methodists, and 10·6 per cent. of "all other Denominations," were illiterate.

The number of children attending school in the City of Dublin, according to the Census of 1891 (week ending the 30th of May), was 31,891, or 45·2 per cent. of persons aged 5 years and under 20 in the city, as then constituted; in 1901 the number returned (for week ending the 11th of May) was 46,535, or 55·4 per cent. of the persons aged 5 and under 20.

In 1901, the number of persons in the City of Dublin returned as sick on the night of the Census was 4,804, or 1 in every 60 of the population; of this number 263 were at their own homes, and 4,541 were in hospital.

The number of persons returned in 1901 as receiving relief under the Poor Law system was 9,543, or one in every 30 of the population—6,024 of these being in the Workhouses, and 3,519 on Outdoor Relief.

For the purposes of Registration of Births, Deaths, and Marriages, the Poor Law Union forms a "Superintendent Registrar's District." Each Union or Superintendent Registrar's District is divided into Dispensary Districts for the Medical Relief of the Poor, under the Medical Charities Act, which Districts, save in a few instances, are identical with the Registrar's Districts. Each Dispensary District is composed of a certain number of District Electoral Divisions.

According to the Returns of the Registrar-General, the number of Marriages registered in the City of Dublin during the 10 years ending March 31st, 1901, was 21,572, equal to an annual average rate of 8·5 per 1,000 of the population. The number registered in the whole of Ireland during the same period affords an average annual rate of 4·8 per 1,000.

The number of births registered in the city during the 10 years was 80,634, affording an average annual rate of 31·9 per 1,000 of the population, the average yearly rate for the whole of Ireland during the same period being 23·0 per 1,000.

The deaths registered during the decennium amounted to 75,442, being equal to an average annual rate of 29·9 per 1,000; the corresponding rate for the whole of Ireland was 18·2 per 1,000.

The number of emigrants during the 10 years ending March 31st, 1901, who stated that they were from the County or City of Dublin, amounted to 10,615 (6,157 males and 4,458 females); the number for the decade ending March 31st, 1891, was 24,814; for that ending 31st March, 1881, 19,726; for that ending with March, 1871, 30,772; and for that ending with March, 1861, 25,755; making a total of 111,682 for the 50 years.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR JOHN MOORE, B.A., M.D. Univ. Dubl. ;

F.R.C.P.I. ; F.R. Met. Soc. ;

Diplomate in State Medicine and Ex.Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four weeks ending Saturday, January 31, 1903.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending January 31, 1903, in the Dublin Registration Area and the twenty-one principal provincial urban districts of Ireland was 25.1 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,093,289. The deaths registered in each of the four weeks ended Saturday, January 31, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Jan. 10	Jan. 17	Jan. 24	Jan. 31			Jan. 10	Jan. 17	Jan. 24	Jan. 31	
22 Town Districts	22.4	27.4	28.6	25.1	25.9	Lisburn -	27.3	31.3	27.3	31.8	29.5
Armagh -	48.1	20.6	20.6	27.5	29.2	Londonderry	15.1	17.6	22.7	21.4	19.2
Ballymena	9.6	23.9	14.4	19.2	16.8	Lurgan -	22.1	44.3	4.4	22.1	23.2
Belfast -	19.3	25.9	25.3	26.2	24.2	Newry -	21.0	33.6	16.8	25.2	24.2
Clonmel -	5.1	41.0	30.8	82.1	39.7	Newtownards	34.3	40.1	34.3	17.2	31.5
Cork -	24.0	17.8	32.9	17.8	23.1	Portadown	5.2	15.5	46.5	15.5	20.7
Drogheda -	32.7	49.0	36.8	8.2	31.7	Queenstown	6.6	13.2	52.7	19.8	23.1
Dublin (Reg. Area)	26.8	30.0	28.1	24.8	27.4	Sligo -	14.4	38.4	24.0	28.8	26.4
Dundalk -	23.9	8.0	87.7	23.9	35.9	Tralee -	26.4	42.3	31.7	42.3	35.7
Galway -	11.7	31.1	27.2	11.7	20.4	Waterford	21.4	37.0	40.9	31.2	32.6
Kilkenny -	29.5	9.8	49.1	29.5	29.5	Wexford -	18.7	32.7	14.0	23.3	22.2
Limerick -	20.5	26.0	35.5	28.7	27.7						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, January 31, were equal to an annual rate of 2·7 per 1,000, the rates varying from 0·0 in eleven of the districts to 10·6 in Tralee—the 8 deaths from all causes registered in that district including one from scarlet fever and one from diarrhoea. Among the 180 deaths from all causes registered in Belfast are 13 from measles, 3 from scarlet fever, one from typhus, 6 from whooping-cough, one from diphtheria, one from simple fever, and 4 from enteric fever. The 26 deaths in Cork from all causes include one from scarlet fever, one from enteric fever, and one from diarrhoea.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this Area is 378,994; that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, January 31, amounted to 187—107 boys and 80 girls; and the deaths to 187—90 males and 97 females.

DEATHS.

The registered deaths represent an annual rate of mortality of 25·7 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the Area, the rate was 24·8 per 1,000. During the four weeks ending with Saturday, January 31, the death-rate averaged 28·6, and was 2·2 below the mean rate for the corresponding portions of the ten years 1893–1902.

There were 3 deaths from scarlet fever, 3 deaths from influenza, one death from diphtheria, 2 deaths from enteric fever, and 7 deaths from *diarrhoea*, dysentery. No death from measles, small-pox, or whooping-cough was registered.

There were 27 deaths from tuberculous disease, namely—one death from tuberculous phthisis, 17 deaths from *phthisis*, one death from tuberculous meningitis, one death from *tabes mesenterica*, and 7 deaths from other forms of the disease.

Two deaths from carcinoma and 3 deaths from *malignant disease* ("cancer") were registered.

There were 14 deaths from diseases of the nervous system. This number includes the deaths of 6 children (all under 5 years of age) from *convulsions*.

Diseases of the heart and blood-vessels caused 28 deaths.

The deaths from diseases of the respiratory system, 44 in number, equal an annual rate of 6.1 per 1,000 of the population of the Dublin Registration Area. The annual average rate for the corresponding period of the past 10 years is 6.9 per 1,000. The total (44) includes 29 deaths from bronchitis, 3 deaths from broncho-pneumonia, and 8 deaths from *pneumonia*.

Five deaths were due to accidental causes, two of the five being caused by poisonous vapours.

In 12 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 6 infants under one year old and the deaths of 2 persons aged 60 years and upwards.

Fifty-three of the persons whose deaths were registered during the week were under 5 years of age (27 being infants under one year, of whom 14 were under one month old), and 50 were aged 60 years and upwards, including 24 persons aged 70 and upwards, of whom 8 were octogenarians, and 2 (females) were stated to have been aged 92 and 100 years respectively.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

Returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast during the week ended January 31, 1903, and during each of the preceding three weeks.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella	Scarlet Fever	Typhus Fever	Relapsing Fever	Diphtheria	Membranous Group	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Other Acute Infectious Diseases	Total
City of Dublin	Jan. 10	1	64	2	28	1	-	12	-	3	15	14	1	-	1	12
	Jan. 17	-	49	-	34	-	-	8	-	2	12	12	-	-	2	15
	Jan. 24	-	47	1	38	2	-	15	-	2	11	12	1	-	3	19
	Jan. 31	-	25	-	35	7	-	6	-	1	19	21	-	-	-	14
Rathmines and Rathgar Urban District	Jan. 10	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-
	Jan. 17	-	1	-	1	-	-	1	-	-	-	1	-	-	-	-
	Jan. 24	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-
	Jan. 31	-	8	-	1	-	-	-	-	-	1	1	-	-	-	-
Pembroke Urban District	Jan. 10	-	1	-	1	-	-	1	-	1	-	-	-	-	-	-
	Jan. 17	-	1	-	3	-	-	-	-	-	1	1	-	-	-	-
	Jan. 24	-	-	-	7	-	-	-	-	-	1	2	-	2	-	12
	Jan. 31	-	-	-	4	-	-	-	-	-	3	1	-	-	-	-
Blackrock Urban District	Jan. 10	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
	Jan. 17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Jan. 24	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	Jan. 31	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
Kingstown Urban District	Jan. 10	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-
	Jan. 17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Jan. 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Jan. 31	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
City of Belfast	Jan. 10	-	-	-	16	-	-	9	2	14	12	14	3	-	-	22
	Jan. 17	-	-	-	18	-	-	16	3	5	3	10	1	-	-	24
	Jan. 24	-	-	-	19	2	-	5	1	4	11	11	1	-	-	34
	Jan. 31	-	-	-	17	-	-	11	-	15	9	16	1	-	-	47

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ending Saturday, January 31, 1903, one case of small-pox was admitted to hospital, and 2 cases remained under treatment at the close of the week.

Seven cases of measles were admitted to hospital, being one over the admissions for the preceding week; 8 cases were discharged, and 35 cases remained under treatment at the close of the week.

Eleven cases of enteric fever were admitted to hospital, 24 cases were discharged, there was one death, and 57 cases remained under treatment at the close of the week.

Thirty-four cases of scarlatina were admitted to hospital, 35 cases were discharged, there were 3 deaths, and 163 cases remained under treatment at the close of the week. This number is ex-

clusive of 22 patients who were under treatment in the Convalescent Home of Cork-street Hospital at Beneavin, Glasnevin.

Seven cases of typhus were admitted to hospital, and 17 remained under treatment at the close of the week.

Seven cases of diphtheria were admitted to hospital; 8 were discharged, there was one death, and 30 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 6 cases of pneumonia were admitted to hospital, 2 patients were discharged, and 17 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, January 31, in seventy-six large English towns, including London (in which the rate was 17·7), was equal to an average annual death-rate of 18·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·3 per 1,000, the rate for Glasgow being 22·6, and for Edinburgh 17·8.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of January, 1903.

Mean Height of Barometer,	-	-	-	29·815 inches.
Maximal Height of Barometer (14th, at 9 a.m.),				30·544 „
Minimal Height of Barometer (7th, at 2 a.m.),	-			28·830 „
Mean Dry-bulb Temperature	-	-	-	41·4°.
Mean Wet-bulb Temperature	-	-	-	39·5°.
Mean Dew-point Temperature,	-	-	-	36·9°.
Mean Elastic Force (Tension) of Aqueous Vapour,				·224 inch.
Mean Humidity,	-	-	-	84·7 per cent.
Highest Temperature in Shade (on 26th),				55·9°.
Lowest Temperature in Shade (on 13th),				25·7°.
Lowest Temperature on Grass (Radiation) (13th),				22·3°.
Mean Amount of Cloud,	-	-	-	58·4 per cent.
Rainfall (on 20 days),	-	-	-	3·269 inches.
Greatest Daily Rainfall (on 8th),				·577 inch.
General Direction of Wind,	-	-	-	S.W.

Remarks.

January, 1903, proved changeable, stormy and rainy. With the prevalent S.W. winds of the month, the weather was generally

open ; but a very cold spell set in with a strong northerly gale on the 10th, and it lasted to the 18th. During this period an anti-cyclone held over the North Sea and South of Scandinavia. This system determined easterly winds in Central Europe and south-easterly winds in the British Isles, the resulting cold being very intense. In the week ended Saturday, the 17th, the screened thermometer fell to 1° at Braemar and 6° at Lairg, in Scotland ; to 12° at Penrith, 13° at Harrogate, 14° at Durham and Church-stoke, in England ; and to 16° at Edenfel, Omagh, 19° at Markree Castle, Co. Sligo, and 20° at Kilkenny, in Ireland. On the other hand, strong and blustering S.W. winds blew almost incessantly from the 22nd to the end of the month, and the thermometer rose in Dublin to 55·0° on the 25th and to 55·9° on the 26th. The result was that the mean temperature of the whole month was somewhat above the average for January over a long series of years.

The duration of bright sunshine was estimated at 56·5 hours, the daily average being 1·8 hours. The corresponding values for January, 1901, were 64 hours and 2·1 hours, and for January, 1902, 54 hours and 1·7 hours.

In Dublin the arithmetical mean temperature (42·1°) was above the average (41·6°) ; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 41·4°. In the thirty-eight years ending with 1902, January was coldest in 1881 (M. T. = 33·2°), and warmest in 1898 (M. T. = 47·8°). In 1902 the M. T. was 43·0°.

The mean height of the barometer was 29·815 inches, or 0·059 inch below the corrected average value for January—namely, 29·874 inches. The mercury rose to 30·544 inches at 9 a.m. of the 14th, and fell to 28·830 inches at 2 a.m. of the 7th. The observed range of atmospheric pressure was, therefore, 1·714 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 41·4°, or 1·0° below the value for January, 1902. Using the formula, *Mean Temp.* = *Min.* + (*Max.*—*Min.* × 52), the M. T. becomes 42·3°, compared with a thirty years' (1871–1900) average of 41·7°. The arithmetical mean of the maximal and minimal readings was 42·1°, compared with a thirty years' average of 41·6°. On the 26th the thermometer in the screen rose to 55·9°—wind, S.W. ; on the 13th the temperature fell to 25·7°—wind, W.S.W. The minimum on the grass was 22·3°, also on the 13th.

The rainfall was 3·269 inches, distributed over 20 days. The average rainfall for January in the thirty-five years, 1866–1900, inclusive, was 2·230 inches, and the average number of rainy days was 18. The rainfall, therefore, and rainy days were considerably above the average. The record rainfall for January was in 1895—namely, 5·711 inches on 24 days. In 1876, only 406 inch was measured on but 9 days. In 1902, 1·614 inches fell on 12 days.

The atmosphere was foggy on the 1st, 4th, 5th, 8th, 12th, 13th, 18th, and 21st. High winds were noted on 21 days, reaching the force of a gale on 9 days—the 3rd, 6th, 10th, 15th, 16th, 24th, 25th, 26th, and 31st. Snow or sleet fell on the 8th, 10th, and 11th ; hail on the 3rd, 11th, 12th, and 13th. Temperature exceeded 50° in the screen on 11 days ; while it fell to 32° in the screen on 7 nights, compared with 7 nights in 1902, 3 nights in 1901, 2 in 1900, 4 in 1899, only 1 night in 1898, 13 nights in 1897, only 3 in 1896, 18 in 1895, 7 in 1894, 4 in 1893, and 15 in 1892. The minima on the grass were 32° or less on 9 nights, compared with 12 nights in 1902, 11 nights in 1901, 13 nights in 1900, 16 in 1899, only 3 in 1898, 21 in 1897, 8 in 1896, 29 in 1895, 17 in 1894, 16 in 1893, and 25 in 1892.

In Dublin the rainfall up to January 31st, 1903, amounted to 3·269 inches on 20 days, compared with 1·614 inches on 12 days in 1902, 2·672 inches on 17 days in 1901, 2·579 inches on 27 days in 1900, 2·483 inches on 24 days in 1899, 1·786 inches on 14 days in 1898, 2·694 inches on 17 days in 1897, only 720 inch on 14 days in 1896, and with a thirty-five years' average (1866–1900) of 2·230 inches on 18 days.

At Cloneevin, Killiney, Co. Dublin, the rainfall was 2·82 inches on 21 days, 47 inch being measured on the 8th. The average fall in January for the 18 years, 1885–1902, was 2·315 inches on 17·0 days. In 1895 the rainfall was 5·93 inches on 24 days, in 1896, 70 inch on 9 days, in 1897, 3·08 inches on 20 days, in 1898, 1·58 inches on 13 days, in 1899, 2·93 inches on 22 days, in 1900, 2·82 inches on 25 days, in 1901, 2·83 inches on 15 days, and in 1902, 1·62 inches on 12 days. Snow or sleet fell on the 8th, 10th, 11th, and 31st.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 3·300 inches on 15 days, compared with 1·860 inches on 9 days in 1902, 4·035 inches on 16 days in 1901, 3·766 inches on 24 days in 1900, 4·395 inches on 24 days in 1899, 2·345 inches on 13 days in 1898, 3·660 inches on 20 days in 1897, and only 485 inch on

7 days in 1896. The heaviest falls in 24 hours were $\cdot 870$ inch on the 17th, and $\cdot 790$ inch on the 6th.

Dr. B. H. Steede writes that at the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell to the amount of $4\cdot 320$ inches on 19 days, the maximal falls in 24 hours being $\cdot 822$ inch on the 8th, and $\cdot 640$ inch on the 16th. The shade thermometers rose to $54\cdot 0^{\circ}$ on the 25th, and fell to $28\cdot 0^{\circ}$ on the 11th. In January, 1899, the rainfall at this Second Order Station was $4\cdot 760$ inches on 23 days; in 1900, $3\cdot 810$ inches on 28 days; in 1901, $3\cdot 541$ inches on 14 days; and in 1902, $1\cdot 666$ inches on 12 days.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, the rainfall was $3\cdot 88$ inches on 19 days, $\cdot 54$ inch being measured on the 8th. The corresponding figures for 1902 were $2\cdot 28$ inches on 14 days. The mean shade temperature was $41\cdot 9^{\circ}$, compared with $40\cdot 6^{\circ}$ in 1902, the extreme readings being—highest, 55° , on the 25th and 26th; lowest, 25° , on the 13th.

In Cork the rainfall was $8\cdot 07$ inches on 26 days, an amount which was $4\cdot 07$ inches above the average. It was the wettest January since 1879, when the measurement was $8\cdot 32$ inches.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell on 22 days to the amount of $3\cdot 531$ inches, $\cdot 730$ inch being measured on the 8th. The total amount of sunshine was $53\cdot 6$ hours, the largest daily duration being $5\cdot 8$ hours on the 11th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, Co. Dublin, reports that the mean temperature at that health resort was $43\cdot 1^{\circ}$, being $0\cdot 3^{\circ}$ above the average for January during the past 5 years. The extreme temperatures were—highest, $57\cdot 5^{\circ}$ on the 6th; lowest, $26\cdot 5^{\circ}$ on the 13th. The mean temperature at Portland Bill was $43\cdot 1^{\circ}$, and at Dungeness, $41\cdot 8^{\circ}$; the mean of these two, $42\cdot 5^{\circ}$, may be taken as the average of the mean temperature of the principal health resorts on the South coast of England, between Portland and Dungeness, being situate, from West to East—Weymouth, Bournemouth, Ventnor, L.W., Brighton, Eastbourne, St. Leonard's, &c. Although the mean temperature for the month was somewhat above the average, yet a cold snap was experienced during the second week; at Kingstown the mean temperature for the 6 days ending at 9 a.m. on the 16th was $34\cdot 8^{\circ}$, whereas at Portland it was $32\cdot 9^{\circ}$, and at Dungeness, $32\cdot 2^{\circ}$. During the same period the extremes of cold recorded at the following seaside stations were:—Nice 27° , Kingstown $26\cdot 5^{\circ}$, Portland 26° , Dungeness 25° .

Bournemouth 22°, Biarritz 21°. The mean daily range of temperature for the month was 8·0° at Kingstown, 6·2° at Portland, and 7·2° at Dungeness. The average sea temperature at Sandycove Bathing Place was 43·4°, it was 40° on the 15th, rose to 43° on the 18th, and to 45° on the 26th. The rainfall at Kingstown amounted to 2·62 inches on 20 days; at Portland it was 2·34 inches on 23 days, and at Dungeness 2·03 inches were measured on 21 days. The mean humidity of the air was 84 per cent. The duration of bright sunshine at Kingstown was 42·6 hours, 31·8 hours at Valentia, 45·7 hours at Parsonstown, 49·8 hours at Southport, and 54·9 hours at Eastbourne.

At the Railway Hotel, Recess, Connemara, County Galway, the rainfall in January amounted to 6·26 inches on 22 days, compared with 6·623 inches on 27 days in 1900, 4·691 inches on 19 days in 1901, and 5·842 inches on 21 days in 1902. The maximal fall in 24 hours was 1·03 inches on the 1st. Snow fell on the 8th.

GELATINE INJECTIONS FOR ANEURYSM.

M. BORDE reports two cases of aneurysm successfully treated by gelatine injections. The injections were given at night, and consisted of white gelatine, 2 grammes; Sydenham's laudanum, 5 drops; plain boiling water, 100 grammes. The temperature was luke-warm, and a fountain syringe was used for the rectal injection.—*Gaz. Hebd. des Sciences Méd. de Bordeaux*.

ABSCESS OF THE LIVER CONSECUTIVE TO ABSCESS OF THE STOMACH.

MM. LECLERC AND TAVERNIER report (*Lyon Médical*) two cases of large abscesses of the liver, in both of which cicatrices of gastric ulcers were found. The first case, a female, forty-two years old, came under observation in hospital on November 10th, 1902. She died on the 7th of April following. The diagnosis was a carcinoma of the pylorus. The clinical history of the second case is not given.

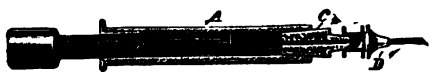
TEST FOR ALBUMIN IN URINE.

A VERY simple test for the presence of albumin in urine is to pour a single drop of urine into a test glass containing boiling distilled water. If albumin be present, there is produced, as the drop falls through the liquid, a thoroughly characteristic opalescence like the smoke of a cigar. This test is especially recommended when a very small quantity of urine is available for analysis.—*J. de Ph. d'Anvers*, through *Rev. Méd. Pharm.*

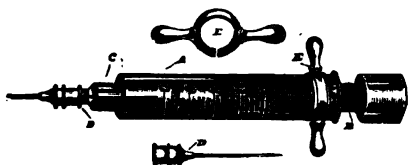
NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

The "All-Glass Aseptic Hypodermic Syringe."

PERFECT freedom from all the difficulties associated with securing absolute asepticism in hypodermic syringes may be obtained by the use of the All-Glass Aseptic Hypodermic Syringe introduced by Messrs. Burroughs, Wellcome & Co., of Snow Hill Buildings, London, E.C. Former methods of construction have been



departed from, and a noteworthy advance has been achieved in the manufacture of hypodermic apparatus. In this unique syringe, the barrel, piston and nozzle consist entirely of glass, the working surfaces of which are ground to fit each other with such accuracy that the solid piston *B* glides easily and evenly within the barrel *A*. The nozzle *C* fits into the barrel *A* by means of a perfect plug joint, and takes a needle *D* of the usual pattern. It will be seen that except during its passage through the needle the solution comes in contact with glass surfaces only, and the four essential parts of the syringe—barrel, piston, nozzle and needle—are



instantly detachable and may be rendered perfectly aseptic. The required quantity of water should be drawn into the syringe, the nozzle removed, and a Hypodermic 'Tabloid' Pro-

duct dropped into the barrel. Upon replacing the nozzle and agitating, solution is rapidly effected without contamination. The cost of the B. W. & Co. All Glass Aseptic Hypodermic Syringe, with two regular needles, is 7s. 6d. each. This syringe can be fitted to any of the B. W. & Co. hypodermic cases at an extra charge of 2s. 0d. A detachable finger-grip *E* (entirely distinct from the essential working part of the syringe) may be had at an extra cost of 6d.

It is to be regretted that so delicate an instrument should be sent out in a rather flimsy cardboard box, instead of a substantial aluminium case.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. X.—*The Nomenclature of Disease and Causes of Death.** By NINIAN M. FALKNER, M.D., F.R.C.P.I.; Dip. State Med.; Medical Superintendent of Statistics, Registrar-General's Office, Ireland.

I HAVE the honour of addressing you at this the opening meeting of the second year of my Presidency of the State Medicine Section of the Royal Academy of Medicine in Ireland.

I hesitated to do so on the grounds of probably excluding valuable communications from other Fellows of the Academy—the meetings of this Section being limited to two in the Session. However, as I consulted the Council of the Section in reference to my doubt, and as they were unanimous in the opinion that I should deliver an Address, I have deferred to their ruling.

It is, no doubt, known to most, if not all, here that the Committee appointed by the Royal College of Physicians, London, are at present engaged in preparing the Fourth Edition of the Nomenclature of Diseases, which will not be issued until the year 1906. As such a considerable time must elapse before its production, my distinguished col-

* Being the Presidential Address delivered before the Section of State Medicine of the Royal Academy of Medicine in Ireland, on Friday, February 20, 1903.

league and friend, John Tatham, M.D. (Dublin), of the General Register Office, Somerset House, has revised the "list of causes of death," from which the statistical tables of the Registrar-General for England are compiled. This list has been adopted by the Registrar-General for Ireland, with the full approval of the Royal College of Physicians of Ireland.

I propose under these circumstances to give a short account of the history of the evolution of vital statistics in England, from the time that the light of Scientific Medicine appears first to have illuminated (no matter how feebly) this important subject.

I also will point out the modifications which the revised nomenclature will introduce into the reports, with the hope that I may be able to impress on every practitioner of medicine in this country the importance of giving a well-defined and accurate "cause of death" when framing his certificate, as it is on this testimony, and this testimony alone, that the value of the mortality statistics of the Nation depends.

If examples from current literature were necessary to prove the enormous public utility and importance of reliable mortality statistics, no better could be adduced than the Open Letter to the Registrar-General of England, which appeared from the pen of Mr. Stephen Coleridge in the *Contemporary Review* of October, 1902, the answer thereto by Mr. Stephen Paget in November, 1902, and the rejoinder of Mr. Coleridge in December, 1902. I do not intend to review or criticise these articles, but I do ask any medical practitioner who has any doubt on his mind as to the value of accurate mortality statistics, to read these most interesting letters.

The first name that I venture to connect with the classification of disease in these countries is that of William Cullen. "He was born in Lanark in 1710 and died in 1790. He founded a medical school in Glasgow. Among his pupils were William Hunter and the famous Joseph Black. He occupied successively the Chairs of Chemistry, Institutes of Medicine, and Medicine, in Edinburgh, and taught clinical medicine at the Royal Infirmary. For many

centuries all diseases had been referred to disorders of the fluids of the body. Just before Cullen's time Boerhaave added to this a pathology of the fibres, still strongly tinctured with the old fluid or humoural pathology. To Cullen is largely due the recognition of the important part played by the nervous system both in health and disease. He denied the theory supported by Boerhaave that the brain was an excretory organ, and the nervous influence a fluid. Many of his speculations as to reflex nervous action, the possible presence in a single nerve, both of motor and sensory fibres, and the connection of the motor and sensory nerve roots, have now proved to be justified." ^a

The works of Cullen were edited by John Thompson, M.D., of Edinburgh, in 1827, and from this edition the following abstract of Cullen's Nosology is taken :—

CLASS I.—PYREXIÆ	Orders	<ol style="list-style-type: none"> 1. Febres. 2. Phlegmasiæ. 3. Exanthemata. 4. Hæmorrhagiæ.
CLASS II.—NEUROSES	Orders	<ol style="list-style-type: none"> 1. Comata. 2. Adynamiciæ. 3. Spasmi. 4. Vesaniæ.
CLASS III.—CACHEXIÆ	Orders	<ol style="list-style-type: none"> 1. Marcores. 2. Intumescentiæ. 3. Impetigines.
CLASS IV.—LOCALES	Orders	<ol style="list-style-type: none"> 1. Dysæsthesiæ. 2. Dysorexiæ. 3. Dyscinesiæ. 4. Apocinoses. 5. Epischeses. 6. Tumores. 7. Extopiæ. 8. Dialyses.

"The History of Official Vital Statistics in England" may be said to coincide with the work of William Farr, who was born in Kenley in 1807. He appears to have studied medicine in London and Paris, and to have devoted his attention mainly to vital statistics and to the questions connected therewith.

A letter appears from him in the first Report issued by the First Registrar-General for England (Mr. J. H. Lister), dated May 16th, 1839. This Report contains an abstract

^a Chambers' Encyclopædia.

for the year ending June 30th, 1838. Up to 1837 the vital statistics had been in the hands of the Parish Registrars, who furnished weekly "bills of mortality."

Central registration did not up to this period obtain in England, and although over sixty years have elapsed since the first Report of the English Registry Office was issued, the words of the great chief of English medical statistics which appear therein may still, from their wisdom, beauty, and power, be listened to with advantage.

"Any improvement in the treatment of disease, and any addition to medical science, will tend ultimately to the diminution of human suffering, but the registration of causes of death is calculated to exercise a still more direct influence upon public health.

"Diseases are more easily prevented than cured, and the first step towards prevention is the discovery of their exciting causes.

"The Registry will show the agency of these causes by numerical facts, and measure the intensity of their influence. The annual rate of mortality will be found in some districts to be 4 per cent., and in others 2 per cent. In other words, the people in one set of circumstances live for fifty years, and in the other set of circumstances, which the registration will indicate, they do not live more than twenty-five years.

"In these wretched districts nearly 8 per cent. are constantly sick, and the energy of the whole population is withered to the roots. Their arms are weak, their bodies wasted, and their sensations embittered by privation and suffering. Half the life is passed in infancy, sickness, and dependent helplessness.

"In exhibiting the high mortality, the disease by which it is occasioned, and the exciting causes of the disease, the abstract of the Register will prove that, while a part of the sickness is inevitable, and a part can only be expected to disappear before progressive and social amelioration, a considerable portion of the sickness and deaths may be suppressed by the general adoption of hygienic measures, which are in actual but partial operation.

"It may be affirmed without great risk of exaggeration

that it is possible to reduce the annual deaths in England and Wales by 30,000, and to increase the vigour (may I not add the industry and wealth) of the population in an equal proportion, for 'diseases are the iron index of misery, which recedes before strength, health and happiness as the mortality declines.' "

From the views held at the time that William Cullen lived and worked, it is clearly evident that much light had been thrown on the nature of the diseases which caused death at the time that the first Report of the Registrar-General for England appeared. In it William Farr gives the first official classification of causes of death.

He classified these causes under three primary divisions. The first division included endemic, epidemic, and contagious diseases. The second division included the so-called sporadic diseases, or those arising in an isolated manner from ordinary causes, or from causes existing in the organism itself, and the third division including deaths from violence. This classification is apparently a development from the earlier division of causes of death into (1) plagues, and (2) sporadic diseases.

The establishment of central registration of deaths in England preceded the compilation of the Report of the First Registrar-General of Scotland (W. P. Dundas) by eighteen years. During that period Wm. Farr, since a Fellow of the Royal Society, had modified his Nosology, had abandoned the division of causes of death into plagues and sporadic diseases, and had adopted a classification consisting of seventeen groups, with 104 causes of death; the first, or zymotic group, corresponding to what in the previous nosology comprehended the endemic, epidemic, and contagious diseases; the second group of diseases of uncertain or variable seat include hæmorrhage, ulcer, cancer, and gout, which, according to our ideas, form a strangely incongruous family.

The registration of births and deaths was established in Ireland in 1864, twenty-seven years in the wake of the English office, and nine years after the foundation of the Registrar-General's Office in Scotland. Before the Irish office existed in its present state, Mr. William Donnell,

C.B., was Registrar-General of Protestant Marriages from the year 1845. He became in 1864 Registrar-General of Marriages, Births and Deaths for Ireland, and continued in office until 1876, during which period Dr. W. Malachy Burke was Medical Superintendent of Statistics in his office. In 1876 Mr. Donnelly retired, and Dr. Burke was appointed Registrar-General, holding that office in combination with the post of Medical Superintendent of Statistics. He lived but three years after his appointment as Registrar-General, dying in the August of 1879. He was succeeded by Dr. Thomas Wrigley Grimshaw, C.B., whose memory, both for his kindly personality, and also for his useful and energetic career, is still green in the recollection of all the members of this Section of the Academy, of which he was an honoured ex-President, and a valuable and faithful ally.

The first annual detailed Report on Vital Statistics for Ireland was issued for the year 1864. In the classification therein adopted a change from that used for the Reports in England and Scotland in 1855 is found to have been made in accordance with a nomenclature of disease which had been framed by William Farr. This classification, with modifications from time to time, has been used in the official reports up to the present time.

STANDARD NOMENCLATURE.

In the year 1864 the Registrar-General for Ireland issued to every member of the medical profession in Ireland a copy of Dr. Farr's "Nosology," which had been issued to the profession in England in the year 1845 by the Registrar-General for England.

In 1869 the Joint Committee on the Nomenclature of Diseases, which had been appointed by the Royal College of Physicians of London in 1857, issued the First Edition of their work. Dr. W. M. Burke had joined this Committee subsequently to the year 1864.

The scheme of this "Nosology" divided the causes of death as follows :—

A. General Diseases—

- a. Infectious Diseases.
- b. Constitutional.

B. Local Diseases.

1,146 causes of death, or rather illnesses, are herein given, not including 3 appendices on—

1. Operations.
2. Parasites.
3. Congenital Malformations.

In 1885 the First Revision was issued. Dr. Grimshaw is thanked in the preface, with others, for the help rendered to the Committee, but by a clerical error he is described as Dr. Graham, Registrar-General for Ireland.

The Committee, in this edition, abandoned the division of diseases into general and local, adopting instead of the former four groups:—

Group A.—Diseases dependent on morbid poisons.

Group B.—Diseases dependent on external agencies other than morbid poisons.

Group C.—Developmental diseases.

Group D.—Not classified.

The division local diseases was retained.

As in the previous edition, the name of each cause of death is given in Latin, French, German, Italian, and English.

The next edition was issued by the Nomenclature Committee in the year 1896.

It is to be regretted that there is a conspicuous absence on the Revision Committee of the Third Edition of this important publication of any representative from Ireland, either from the Royal College of Physicians or from the Office of the Registrar-General. In this edition the division of causes of death into general and local diseases is restored, and is to be in future the standard of Nosological Classification for Great Britain and Ireland.

In the words of Dr. Tatham, who succeeded Dr. Ogle on the Revision Committee which had been appointed by the College of Physicians of London in 1892, "The list of causes of death published in our annual reports has remained practically unchanged for the last twenty years, notwithstanding that two separate editions of the Nomenclature of Diseases have been published by the Royal College of Physicians of London during that period."

The Registrar-General has determined to discontinue the present classification in the 1901 Report, and proposes to divide diseases into (a) General Diseases, and (b) Local Diseases, the latter being grouped for convenience according to organs, or systems affected.

The use of such terms as "zymotic," "miasmatic," "constitutional," &c., to describe groups of "general diseases," differing widely as they do with respect to their ætiology, can no longer be justified.

The main objects in revising the list of causes of death were:—

(1.) To bring statistics of mortality into line with the official nomenclature of the College of Physicians, taking care to interfere as little as possible with the comparability of the new tables and those of past years.

(2.) To endeavour to induce practitioners to be more exact in certifying causes of death by providing additional lines in certain cases in the National Records of Mortality.

A careful revision of the list modified by Dr. Tatham from the "Official Nomenclature (1896)" shows the following changes which have been approved by the Royal College of Physicians of Ireland, and have been adopted by the Registrar-General for Ireland:—

1. Puerperal Phlegmasia Dolens -	Childbirth	- to Gen. Dis., Gr. A
2. Infectious Endocarditis -	Heart, B, V	- " "
3. Epidemic Pneumonia -	Respiratory	- " "
4. Phlegmon. Carbuncle -	Skin	- " "
5. Lupus -	"	- " "
6. Rheumatism of Heart -	Not in N.	- " "
7. Injury at Birth -	"	- " "
8. Atelectasis -	Respiratory	- " "
9. Dentition -	Digestive	- " "
10. Mastoid Disease -	Not in N.	- to Otitis, Gr. B II.
(a) Cerebral Hæmorrhage	Nervous	to Circulatory, Gr. B IV.
(b) Cerebral Embolism		
11. (c) Cerebral Thrombosis		
(d) Apoplexy		
(e) Hemiplegia		
12. Gastro-enteritis -	Not in N.	- to Digestive
13. Appendicitis -	"	- "
14. Old Age -	from Group A	- to Ill-defined
15. Ascites -	Diseases of Liver -	"

New List of Causes of Death as used in the Annual Reports of the Registrars-General for England and Wales, Scotland, and Ireland :—*

GENERAL DISEASES.

Small-pox { Vaccinated.
Not Vaccinated.
Doubtful.
Cow-pox. Effects of Vaccination.
Chicken-pox.
Measles (Morbilli).
Epidemic Rose Rash.
Scarlet Fever.
Typhus.
Plague.
Relapsing Fever.
Influenza.
Whooping-Cough.
Mumps.
Diphtheria (*Membranous Croup*).
Cerebro-Spinal Fever.
Simple Continued Fever.
Enteric Fever.
Asiatic Cholera.
Epidemic Diarrhoea, Epid. (or
Zym.) Enteritis.
Diarrhoea, Choleraic Diarrhoea.
Dysentery.
Malarial Fever.
Hydrophobia.
Glanders, Farcy.
Anthrax, Splenic Fever.
Tetanus.
Syphilis.
Gonorrhoea, Stricture of Urethra.
Puerperal Septicæmia, Sapræmia.
Puerperal Pyæmia.
Phlegmasia Alba Dolens.
Puerperal Fever.
Infective Endocarditis.
Epidemic Pneumonia, Pneumonic
Fever.
Erysipelas.
Septicæmia, Sapræmia (not Puer-
peral).
Pyæmia (not Puerperal).
Phlegmon. Carbuncle (not Anthrax)
Phagedæna.
Other Septic Diseases.

Tuberculous Phthisis (Pulm. Tuber-
culosis).
Phthisis (not otherwise defined).
Tuberculous Meningitis.
Tuberculous Peritonitis.
Tubes Mesenterica.
Lupus.
Tubercle of other Organa.
General Tuberculosis.
Scrofula.

Parasitic Diseases.

Starvation.
Scurvy.
Alcoholism, Delirium Tremens.
Opium, Morphia Habit.
Poisoning by Ptomaines and other
Food Toxins.
Industrial { by Lead.
Poisoning { by Phosphorus.
 by Arsenic and other
 Metals.
Rheumatic Fever, Acute Rheuma-
tism.
Rheumatism of Heart.
Chronic Rheumatism.
Rheumatic Arthritis, Rheumatic
Gout.

Carcinoma.
Sarcoma.
Cancer, Malignant Disease (not
otherwise defined).

Rickets.
Purpura.
Hæmophilia, Hæmorrhagic Dia-
thesis.
Anæmia, Leucocythæmia.
Diabetes Mellitus.

Premature Birth.
Congenital Defects.
Injury at Birth.
Atelectasis.
Want of Breast Milk.
Teething.

* The terms printed in *italics*, being the names of symptoms merely, or being unauthorised or otherwise objectionable, should be used, in Medical Certificates, only when precise information is unobtainable.

LOCAL DISEASES.

DISEASES OF NERVOUS SYSTEM—

Meningitis, Inflammation of Brain.
Softening of Brain.
General Paralysis of Insane.
Insanity (not Puerperal).
Chorea.
Epilepsy.
Convulsions.
Laryngismus Stridulus.
Locomotor Ataxy.
Paraplegia and Disease of Cord.
Neuritis, Periph. Polyneuritis.
Brain Tumour (not specific)
Nervous System, other Diseases.

DISEASES OF ORGANS OF SPECIAL SENSE—

Otitis, Mastoid Disease.
Epistaxis, Nose Disease.
Ophthalmia, Eye Disease.

DISEASES OF HEART—

Valve Dis., Endocarditis (not Infective).
Pericarditis.
Hypertrophy of Heart.
Angina Pectoris.
Dilatation of Heart.
Fatty Degeneration of Heart.
Syncope, Heart Disease (not otherwise defined).

DISEASES OF BLOOD VESSELS—

Cerebral Hæmorrhage, Emb., Throm.
Apoplexy Hemiplegia.
Aneurysm.
Senile Gangrene.
Embolism, Thrombosis (not Cerebral).
Phlebitis.
Varicose Veins.
Blood Vessels, other Diseases.

DISEASES OF RESPIRATORY ORGANS—

Laryngitis.
Membranous Laryngitis (not Diphtheritic).
Croup (not Spasmod. or Membr.)
Larynx, Trachea, Diseases of (not otherwise defined).
Bronchitis.
Lobar, Croupous Pneumonia.
Broncho, Catarrhal, Lobular—Pneumonia.
Pneumonia (not otherwise defined).
Emphysema, Asthma.
Pleurisy.
Fibroid Disease of Lung.
Respiratory Diseases, other.

DISEASES OF DIGESTIVE SYSTEM—

Tonsillitis, Quinsy.
Mouth, Pharynx, Oesophagus, Disease (not specific).
Gastric Ulcer.
Gastric Catarrh.
Stomach, other Dis. (not Malig.).
Enteritis (not Epidemic).
Gastro-Enteritis.
Appendicitis, Perityphlitia.
Hernia.
Intestinal Obstruction.
Other Diseases of Intestines.
Peritonitis (not Puerperal).
Cirrhosis of Liver.
Liver and Gall-bladder, other Diseases.
Digestive System, other Diseases.

LYMPHATIC, &c., DISEASES—

Spleen Disease.
Lymphatic System, other Diseases
Thyroid Body Disease.
Supra-renal Capsules Disease.

DISEASES OF URINARY SYSTEM—

Acute Nephritis, Uræmia.
Chronic Bright's Disease, Albuminuria.
Calculus (not Biliary).
Bladder and Prostate Disease.
Urinary System, other Diseases.

DISEASES OF GENERATIVE SYSTEM—

Ovarian Tumour (not Malig.).
Other Diseases of Ovary.
Uterine Tumour (not Malig.).
Other Diseases of Uterus and Vagina.
Disorders of Menstruation.
Gener. and Mam. Organs, other Diseases.

ACCIDENTS OF CHILD BIRTH—

Abortion, Miscarriage.
Puerperal Mania.
Puerperal Convulsions.
Placenta Prævia, Flooding.
Other Accidents of Pregnancy and Childbirth.

JOINT DISEASES—

Carica, Necrosis.
Arthritis, Periostitis.
Other Diseases of Locomotor System.

SKIN DISEASES—

Ulcer, Bed sore.
Eczema.
Pemphigus.
Skin Diseases, other.

ART. XI.—*The Utilisation of our Climate in the Treatment of Tuberculosis in the Home.** By J. R. GARRATT, M.D., B.Ch., B.A.O., B.A. Univ. Dublin.

It has often been said that the climate of the British Isles belongs to the most health-giving in the world for the vigorous, but is less adapted for the invalid. If, however, a tubercular subject is obliged to stay at home, it is often possible for him, by judicious management, to obtain great benefit by availing himself of all the advantages, and defending himself from the injurious influences of our home climate. Although we must admit that the climate of our island is rather moist, that the air is often dull and sunless, that rain falls on comparatively many days, and is distributed over many hours, that the wind is often high and keen, and that the shelter is limited, still it is no worse than many places where good results have been obtained.

At Falkenstein and Hohenhonnef they have as good records as at Davos or St. Moritz. Although these latter places have great climatic advantages, the others make up for this by their attention to hygiene, diet, and especially the open-air treatment.

Hermann Weber and Michael G. Foster, in their joint article on "Climate in the Treatment of Disease," in Dr. Allbutt's "System," lay it down as an axiom that "Pure air and water, the possibility of spending a great part of the day in the open air, good hygienic and dietetic arrangements, and the presence of a good local physician conversant with the peculiarities of the climate and of the entire locality, are the most necessary conditions." They have arranged in their article seven points for the invalid to study under the guidance of his physician:—

- (1.) The selection and arrangement of his rooms for air and other hygienic influences.
- (2.) The arrangement of his meals as to quality, quantity, and time.
- (3.) How to be as much as possible in the open air.

* Being a thesis for the Degree of Doctor of Medicine in the University of Dublin, read on February 23, 1903.

(4.) What kind and amount of exercise to take, and at what times, and at what times of the day, and when to rest.

(5.) How to clothe himself at different times of the day and of the season.

(6.) How to manage the skin.

(7.) How to occupy the mind.

They further add: "Without due attention to these points many cases, even at the best resorts, are not benefited; with it good results can be obtained even at inferior localities."

(1.) As regards the selection of rooms. The majority of the great sanatoria have a southern aspect, and, if it be possible, our patients' rooms should have a similar aspect, though some dozen or more institutions face all directions, showing that it is not essential.

As regards cubic space, from 1,500 to 3,000 cubic feet. Indeed there is no advantage in having a large cubic space. The essential is ventilation. Nineteen institutions have their bedrooms ventilated by open windows alone, some having fanlights: whilst eleven, including our National, have open windows, together with open fires or chimneys. In other words, the conditions one ordinarily finds in every house.

(2.) As regards the arrangement of his meals as to quality, quantity, and time. An abundant and varied dietary, in which milk, butter, fat, and vegetables occupy an important place. The object of the dietary is to increase the weight gradually to the normal, or above the normal, value, for, as Weir-Mitchell has shown, a gain in weight, up to a certain point, goes hand-in-hand with a gain in all other essentials of health.

The quantity of food eaten must be considerable; must at least equal in amount that which is eaten by an ordinarily healthy individual.

As regards time. Eight o'clock breakfast; one o'clock for lunch. Previous to this the patient should be resting at full length for an hour in the open air or at an open window. This should be his chief meal of the day. Seven o'clock for supper. Before this meal, too, he should rest for an hour on a sofa chair.

(3.) How to be as much as possible in the open air. In no part of the system of treating tuberculosis will the physician encounter so much prejudice as when he comes to open the window on a cold day. It will take all his tact and perseverance to gain his object, for he must carry his patients and their friends with him, and not oppose them, or else they will surely cheat him when his back is turned.

Continually the statement is made that they are too delicate to stand the exposure. Now, it has been found by experience that no amount of exposure to wet or any variation of temperature causes the most delicate patient to contract what is termed a chill, or to suffer any other harm, so long as an open-air life is led and the exposure is constant. If patients are well nourished, sufficiently clothed, and sheltered from the wind, any degree of cold may be defied. At Falkenstein, for example, patients may be seen lying out of doors for hours during thick fog, and even in snow-storms, with a temperature below freezing point. The famous sanatoriums at the Black Forest have a moist, raw climate during many months of the year, and their patients do just as well during these months. So we may conclude that no day is too bad but that benefit may be derived from it.

Our chief enemy is wind. Blumenfeld and others have shown that exposure to winds, more especially to cold winds, is injurious, and the conclusions of these observers are borne out by the experience of all sanatorium authorities. If a storm rages on the front of the house the back must be free, and there our patients may at least rest at an open window. If it be merely a keen wind, some road will be found to give shelter.

People are vastly too much afraid of rain, and to send our patients out with the dread that rain will come on and that they must hasten back is exceedingly bad. Mere wet does no harm so long as our patients do not hurry and exhaust themselves. Let them walk slowly and deliberately as usual, and, on their arrival, have dry clothes awaiting them.

For the well-to-do, a great help in the administration of open-air is the erection of a well-built hut, large enough to

accommodate a sofa couch in any dimension. A narrow door placed in the north wall gives entrance. By a judicious management of the four large windows—one to each side of the hut—our patient may enjoy a free current of air, and at the same time be out of a draught. At first, in cold weather, the feet are apt to become cold, and the inmates need hot jars, but after a little while they dispense with these, and never seem to need them again, even on the bitterest of days. Here it is that our patient should rest for an hour before his mid-day and evening meal; here he may spend the greater part of the wet and blustering days.

(4.) What kind and amount of exercise to take, and at what time of the day, and when to rest. The amount depends altogether on the state of the case—the mere act of dressing being sufficient for the weak. The kind largely depends on his means. However, the best form of exercise is within the reach of all—regular up-hill climbing. Let it be done gradually and deliberately on a slight gradient at the rate of two miles an hour. Slow driving in open carriages or horse-back, as Sydenham advocates. The time of the day to rest is before the two chief meals—whether one sides with Dettweiler in prescribing rest in verandahs in the place of exercise, or with Sir H. Weber (an equally great authority), who says that rest gives rise to mental depression, and has a lowering influence on the vitality of the body.

Moreover, too much rest in the recumbent posture gives rise to indolence, and many patients treated this way never seem to regain enough energy to resume their work—a serious drawback to those of slender means; for one of the great points gained by treating a patient in his own home is that we effect a cure under the conditions which are the same as those he lives in.

(5.) How to clothe himself at different times of the day and of the season. Warm inner flannels for the day time, which should be equal as regards warmth to the night flannels, so that no difference may be felt in changing. A good supply of light over-clothes, so as to permit of many changes in case of wet. No muffling is allowed. In the case of ladies, shorter skirts and gaiters should be worn.

both for ease in walking and to obviate the discomfort of wet ends to the skirts.

(6.) How to manage the skin. The best way of improving the action of the skin, and at the same time diminishing the liability to what is termed a chill, is by the use of some form of shower-bath, combined with friction, supposing provision to be made that the patient does not tire himself by too vigorous drying. Cold water is used, or tepid for the weak. For tubercular lesions of bones sea-bathing has long been of service.

(7.) How to occupy the mind. Owing to the influence of the mind upon the body all that tends to make the patient happy and cheerful should be permitted. All that is cheerless and depressing should be banished from his surroundings.

There is one form of occupation for the mind that has its drawbacks—visitors. Every medical man has observed in hospital how the temperatures of the patients invariably go up after visiting day. Whether visitors do so much harm in the patient's home, where he is surrounded by all that he would otherwise be mentally picturing, is open to doubt. But some people have the habit of becoming excited when they talk, and so excite their listener. Moreover, there is the ever present danger of friends being the means of introducing the germs of "feverish cold," of "influenza," or of the exanthemata. Gerhardt puts it—"Few people die of disappointment, but tuberculosis is a grave disease." So, in the home, where the patient has plenty to amuse him, he is better without many visitors.

ART. XII.—*Dysentery amongst the Troops in South Africa, with its Treatment.*^a By J. H. DOUGLASS, M.D., M.B., B.Ch., B.A.O. Dublin University, and L.M. Rotunda, Dublin; late Civil Surgeon to the Forces in South Africa.

In writing on such a subject as dysentery, one must bear in mind the wide diversity of symptoms which this disease

^a Being a thesis for the Degree of Doctor of Medicine in the University of Dublin, read on February 28, 1903.

creates in different countries, and to use the word "dysentery" as a term applied to what is probably a group of diseases, of which the principal pathological feature is inflammation of the mucous membrane of the colon, and of which the leading symptoms are pain in the abdomen, tenesmus, and the passage of frequent small stools containing mucus, or mucus and blood. It would not be incompatible, I think, before going on to describe the differences in the symptoms and treatment of dysentery in South Africa, to describe an ordinary typical case of acute dysentery.

A common history to get is that the patient has suffered from an attack of ordinary diarrhoea. The stools at first copious, bilious and watery—from four to five in number in the twenty-four hours—had latterly and by degrees become less copious and more frequent, less fæculent and more mucoid, their passage being attended by a certain and increasing amount of straining and griping. On looking at what was passed, the patient had discovered that now there was very little except mucus tinged or streaked with blood, about a tablespoonful being passed at a time. Later on the desire to go to stool has become almost incessant, the effort to pass something being accompanied by agonising griping and tenesmus. There is very little fever with all this suffering—the thermometer showing a rise of only one or two degrees.

In another type of case the commencement is much more abrupt. Within a few hours of its commencement the disease is in full swing.

In either case, after four to six days, the urgency of the symptoms may gradually diminish, and the acute stage taper off into a subacute or chronic condition, or it may terminate in perfect recovery.

If well treated, and the epidemic is not of great malignancy, you come to look at the sequelæ as more dangerous than the disease, for however mild the case may be, and perhaps after months, and even a year, of comparative good health, and when dysenteric symptoms had long ceased to trouble the patient, and had perhaps been forgotten, there is suddenly sprung on you the gravest of all the sequelæ of this disease—the patient gets "abscess of the liver."

To bring this point more graphically before you, and also to show you the methods adopted in some of the hospitals in South Africa, I will read to you the medical case sheet of a patient under my charge at No. 8 General Hospital, Bloemfontein. This case came under my charge as a case of "Debility."

MEDICAL CASE SHEET.

Regimental No.—7,085. Surname—Lynch. Christian Name—Larry. Age—20. Rank—Private. Unit—Royal Irish Fusiliers. Service—1st Lt. Date—No. 8, Gen. Hospital, Bloemfontein, Sept. 20th. Disease—Abscess of Liver.

History.—Patient was admitted to hospital in August, 1902, at Springfontein, suffering from a constant pain on his right side about the region of his liver.

Previous History.—In June, 1901, patient had enteric fever, and when convalescent in August, 1901, he got an attack of dysentery, which lasted about a month. Patient kept in good health till about a fortnight before his admission into Springfontein Hospital in August, 1902.

Symptoms and Signs.—Patient complains of a sharp pain in the region of his liver on the right side, corresponding to the middle of his eighth rib. This pain is constant, and is increased on movement. The liver is enlarged downwards. The patient looks pale and debilitated, but has no diarrhoea or other symptoms of dysentery.

On September 25th he had a slight rise of temperature, which lasted to the 28th, and on October 5th his temperature rose from normal to 103·4°.

On October 25th a small swelling was noticed over the liver in a line with the eighth rib, but it was associated with no temperature.

On the 26th the swelling increased in size and the temperature went up to 100°.

On the 27th the patient was taken to the theatre and a needle was inserted, which showed the presence of pus. An incision was then made along the border of the eighth rib into the liver, and pus in large quantities was evident, showing the presence of a large abscess. The incision was enlarged, and a large sized drainage tube inserted. The temperature in the evening fell to normal, but rose a degree in the morning, since when the patient's temperature has been normal.

Three cultures were made from the pus—two being sterile, the third containing a colony of staphylococci.

Nov. 10th, about six days after the operation, bile appeared in the discharge, and has been present ever since. The patient's condition has greatly improved, his anæmic appearance having disappeared.

As regards this case, you see it was about a year from the time he got his attack of dysentery that symptoms of liver abscess appeared. During the interval he was doing garrison duty at Edenburg, and felt in comparative good health.

The organisms in this case were sought for both in the stools and pus from the abscess without success, and culture tubes were inoculated with the pus from the abscess, with the result that two out of the three were sterile, while the third contained a small colony of staphylococci, which was probably accidental.

This long interval between the attack of the disease and the appearance of a liver abscess was often seen in South Africa, although it is met elsewhere, and I think it is a peculiar aspect of dysentery in South Africa. Cases in which the abscess was single generally recovered, whilst in those with multiple abscesses the case was the reverse. Early appearance of bile in the wound after operation seemed a good prognostic sign.

As regards the aetiology of the disease, it is attributed to polluted water and infection of food from fæcally impregnated soil by means of flies and dust storms.

Treatment.—As regards treatment, the dysentery in South Africa seemed to differ from that in India by the fact that ipecacuanha, even up to drachm doses, had very little effect on the disease, and in some of the worse cases apparently no effect whatever.

Calomel in small doses frequently given did some good, especially if combined with tonics. Salines in the form of sulphate of sodium or sulphate of magnesium in drachm doses every hour until motions become copious, fæculent and free from blood and mucus, generally effected a cure. It is best given with cinnamon water, which hides the taste, and also seems to have some beneficial action on the disease itself.

Enemata of warm water with boric acid give temporary relief from the tenesmus. The great thing, however, is rest. Keep the patient warm in bed, and put him on a fluid diet of milk only, or milk with soda or lime water, for the first few days; then, as the disease abates, give arrowroot, chicken soup—all of which must be warm.

The patient must not be allowed to get out of bed, and must keep perfectly quiet. When he has a call to stool he must use the bed-pan, and, if possible, resist the desire to go to stool as often as possible—the spasm passing away if resisted; and if this is done for several times the patient has the satisfaction of passing a larger motion, which causes him less pain and straining.

Now, as regards the treatment by sulphur. The use of sulphur in dysentery was suggested on the analogy of the treatment of anthrax by sulphur. Ipecacuanha was formerly used locally in the treatment of anthrax, and it was natural to suppose that if sulphur was a more successful germicide in case of anthrax, it might probably be a correspondingly more successful treatment in dysentery.

The results of its administration in dysentery in South Africa have been amply justified. In the first place, the great advantage it has over ipecacuanha is that there is no vomiting. Neither is it necessary to starve the patient as it is preparatory to administering ipecacuanha, and, however careful you may be both by preventing food being given for some hours before, and also by administering a small dose of tinct. opii about half an hour before you give the ipecacuanha, nevertheless you may very often get vomiting, and valuable time is wasted. Another advantage is that you can give farinaceous diet from the first.

As regards the dose of sulphur, 20 to 30 grains of sublimed sulphur combined with 5 grains of Dover's powder, made up with mucilage and flavoured with syrup of orange, is given every four hours in acute cases. With chronic cases you can dispense with the Dover's powder and less sulphur is necessary.

From the administration of the first powder the patient generally felt more comfortable, the diarrhœa, tenesmus,

and griping pains were relieved, and blood and mucus left the stools in a few days.

The opium in the Dover's powders comforts the patient, and keeps the ulcerated portion of the bowel at rest, and allows the antiseptic powers of the sulphur to take effect.

As regards the way sulphur acts nothing definite is known, but probably the sulphuretted hydrogen and other sulphur acids which are formed in the bowel inhibit the growth of the micro-organisms of dysentery.

Again, the drug may do good by its mild purgative action, since it increases the secretion of the intestinal juice, and stimulates slightly the muscular coats. Whatever its action is, the fact remains that you can generally get a cure in about a week if the case is taken in hand early in the disease.

Of all the cases that passed through my hands in which I administered sulphur, all, as far as I can gather, recovered completely, and some of the patients whom I met months afterwards told me that they had no signs of recurrence or symptoms of liver abscess. I also found sulphur did extremely well in cases of chronic diarrhoea, and in some patients, who had had diarrhoea ever since they arrived in the country, it managed to effect a cure. I also tried it on a few bad cases of enteric, in which I suspected extensive ulceration near the ileo-cæcal valve, and I must say it seemed to do good, especially in one of the cases where there was a great deal of local peritonitis, and in whom I was afraid of perforation. Of course in these cases I gave small doses guarded by opium on account of the purgative action of the sulphur.

In conclusion, I must say I place great faith in sulphur in the treatment of dysentery, not only from my own experience, but also from what I have heard from other medical men in South Africa. And I believe that in future dysentery will be treated by sulphur combined with rest, diet and tonics.

ART. XIII.—*Diphtheria*.^a By ROBERT G. H. TATE, M.D.
Univ. Dublin.

THE above name has been given to an affection characterised by a local fibrinous exudate, usually upon a mucous membrane, and by constitutional symptoms due to toxins produced at the site of this lesion. The disease was well known in ancient times, Galen having handed down a description of it to us, and epidemics of it are recorded as having occurred during the Middle Ages. By the writers of these times it was known by many names, such as "Angina Suffocativa," "Putrid Throat," "Spotted," "Malignant," "Erysipelatous," and "Gangrenous" sore throat, until a Frenchman—Bretonneau, of Tours—classed all these affections under one head, and named them "Diphthérie."

The disease, which is highly infectious, is endemic in the larger centres of population, though it also occurs in a sporadic manner in less closely populated districts. It also shows a marked tendency to become epidemic at certain seasons of the year, and it is worthy of note that these seasons are those in which scarlet fever, measles, and other diseases which affect the respiratory system are most commonly found to be prevalent. In fact, it was remarked to me by a doctor in charge of a large fever hospital, that he never was sure that a patient in the scarlatina wards would not contract diphtheria, and *vice versâ*, until he saw him out of the establishment. Indeed, there seems to be, from his observations, some subtle affinity between the two diseases of which he could offer no explanation.

The cold, damp weather of autumn seems to be most suitable for the growth and spread of the disease. No infectious disease appears to be so fatal to physicians and nurses, probably owing to the fact that it is almost impossible to escape direct contamination from the patient during the processes necessarily gone through whilst examining the affected throat on the physician's part, and cleansing and feeding on the nursing attendant's part.

^a Being a thesis for the Degree of Doctor of Medicine in the University of Dublin, read on February 23, 1903.

Bedding, clothes, books, and utensils used by the patient are most tenaciously infected by the virus, and are capable of retaining the poison for very considerable periods. A child's toys are said to have carried the disease to another individual after having been kept for five months in a dark cupboard. These articles are most probably infected by bacilli derived from the mucus and pieces of membrane coughed up by the patient, which dry and set free the organisms.

A noticeable feature about the disease is the close relation which appears to exist between its presence and the existence of faulty drainage or polluted water supply in the neighbourhood. This connection of facts has been the cause of much controversy, some authorities stating that the emanations from faulty drains are in themselves capable of producing the disease, whilst others deny this fact. The more recent researches seem to point out that the people constantly exposed to the lowering influences of drainage effluvia have their vitality reduced to such a low ebb that they are unable to resist the assault of diphtheritic infection, and the co-existence of faulty drains and this disease would seem to be partially, if not entirely, explained.

As has been hinted from time to time in the early part of this paper, the affection of diphtheria would seem to be dependent on the infection of the patient with a definite micro-organism, and this has now been proved to be the case with an almost absolute certainty, though, as a rule, it is not present alone, but is commonly found mixed with other microscopic bodies.

The parasite, described by Klebs and Löffler, which has been found in diphtheritic membranes and in the affected mucous cavities of patients suffering from the disease, and which has been proved to be in itself capable of producing the affection by its action, is a small, delicate bacillus, varying from $3\ \mu$ to $4\ \mu$ in length, and having its ends rounded. It varies slightly in length, three varieties being described—the long, medium, and short—and these variations would seem to be largely due to the media on which the bacillus is grown when kept in a laboratory.

If grown on glycerine-agar, the bacilli, as a rule, have a

tendency to grow to extreme lengths; on blood serum and gelatine they are medium in character, whilst in broth they tend to be stunted in form. This statement as to the length of the organism some of my own work in the Pathological Laboratory of this University would seem to bear out, although it was not found to be invariably correct.

Some of the bacillary rods show swelling at both ends, and others at only one, to which phenomenon the name of "Clubbing" has been given, and they also show a very marked tendency to lie side by side, three or four of them together, in what has been termed "parallel grouping." They are non-motile, and do not form spores, and stain well by Gram's method, and also ordinary aniline dyes.

When stained by Loeffler's alkaline methylene blue they give a very characteristic appearance. The ends of the rods are more deeply stained than the rest of the bacillus, as are also small segments of the body, giving what is known as "Polar Staining," whilst the phenomenon of "Metachromatism" is often marked, both at the poles and also in the rods, appearing as granules of a dark purple colour, contrasting markedly with the ordinary blue colour of the rest of the mass.

Another staining method, which a writer in the *British Medical Journal* states to be absolutely diagnostic in an overwhelming majority of cases, is that of Neisser, in which the polar bodies at the ends of the bacilli are found to take up a deep blue colour, whilst the body of the organism is stained brown if the process is properly carried out.

The growths of the micro-organism on the various media do not present any very marked characteristic for diagnostic purposes, but one point is worthy of note as bearing on the treatment of the disease, and that is, that although in the early stages of its growth on laboratory media the bacillus produces a very slight acid reaction, yet, afterwards, this reaction changes to one of a markedly alkaline nature, and it would seem to be essential for its welfare that this alkaline condition continue. With regard to the value to be attached to a bacteriological examination for diphtheria much may be said, and it is well known that, whilst the discovery of typical diphtheria bacilli proves the presence

of the disease beyond dispute, its absence has little or no weight in proving the absence of the affection. The reason of this statement is threefold.

1st. It is quite possible to swab out a throat, and even to rub over the surface of the membrane, without obtaining any typical bacilli, and, indeed, it has been said that the only certain method of obtaining specimens of the organism, if present, is to raise part of the membrane and swab under it.

2nd. If antiseptic gargles or sprays have been in use it is natural to expect that the bacilli may have been washed away and destroyed by their action.

3rd. As a rule, very mixed growths are obtained from infected throats, and, even in a careful examination, the diphtheria organism may escape notice.

It is also well to remember that a bacillus is in existence, and is frequently found, in perfectly healthy throats, which is not pathogenic, but which, at the same time, presents a most striking similarity to the Klebs-Löffler bacillus. This organism, known as the "pseudo-diphtheritic bacillus," does not, as a rule, show polar staining, and tends to be swollen at the centre, in contradistinction to the Klebs-Löffler organism, whose ends are thicker than the body. It also shows slight cultural distinctions from the Klebs-Löffler bacillus.

Let us now look to the symptoms of the disease.

In common with other infectious diseases, it shows a period of incubation, which lasts, as a rule, "from two to seven days, oftenest two," as Osler puts it.

The initial symptoms are similar to those of an ordinary febrile attack—headache, slight fever, shivering, and perhaps pains in the bones.

Usually the temperature runs up rapidly to 102° or 103°. In a case which came under my own notice, whilst Clinical Clerk in charge of fever wards, convulsions were well marked as an initial symptom in a young child. In pharyngeal diphtheria, which is the most common type, the first symptom noticed by the patient is frequently what has been described to me as "a scraped feeling of the throat on swallowing," and, on examination, the pillars of the fauces

and pharyngeal walls are found to be markedly reddened. After a short time, as a rule about 24 hours, the membrane begins to appear as greyish cream-coloured dots, or patches, on the swollen tonsils, and Osler states that in three days it ought to spread over the tonsils, pillars of the fauces, and perhaps the uvula, which is œdematous as a rule, but in very few cases of those admitted to the wards during my term of office was the growth so rapid, although in one or two it exceeded this in speed of extension.

A marked characteristic of the membrane in diphtheritic cases, and one of diagnostic value, is the tenacious manner in which it adheres to the mucous surface under it, causing bleeding when torn off, and leaving a lacerated surface, which, however, is rapidly covered by new growth.

As a rule, the glands of the neck are swollen and tender, though this symptom is not of necessity always present. In a case of moderate severity the general condition of the patient is not, as a rule, much depressed; the temperature commonly ranges between 102° - 104° , but may on occasions run up to 105° . A point of interest, which has been demonstrated to me, is that frequently the first sign of the formation of a membrane, which may be noted without examination of the throat, is the sudden incidence of a marked difficulty in speaking, amounting in some cases to complete aphonia.

The patient has a tendency to cough, and salivation may be marked, but this coughing would seem to be in a large degree voluntary, and is accompanied by efforts to get up plugs of mucus and membrane. Osler states that, in a case such as described, the membranes should be separated, the throat clear, and convalescence set in in from seven to ten days.

Although many cases, such as described, and which may be called typical diphtheria, are met with, yet one often comes across affections which, although true diphtheria, as the presence of the Klebs-Lœffler bacillus proves, yet vary very much from the form described as typical. Of these Koplik gives the following classification:—

1. Cases in which there is no local manifestation of a

membrane, but a simple catarrhal angina associated frequently with a croupy cough.

2. Cases in which the tonsils are covered by a pultaceous exudate, not a consistent membrane.

3. Cases presenting a punctate form of membrane, isolated, and usually on the surface of the tonsils.

4. Cases which begin and often run their whole course with the local picture of a typical lacunar tonsillitis. These cases are very doubtful in their course, as they may run a simple, uneventful course, or may, on the other hand, suddenly and rapidly form a membrane which may spread to the nose or pharynx with severe constitutional symptoms.

5. "Latent diphtheria," of which Heubner has described cases which he states to be "usually secondary," occurring in hospital practice chiefly, in young persons, the subject of wasting affections, such as rickets and tuberculosis. There are fever, naso-pharyngeal catarrh and gastro-intestinal disturbances. Diphtheria may not be suspected until severe laryngeal complications develop, or the condition may not be determined until the autopsy. Of this last type I unfortunately have never had the opportunity of seeing a case.

As may very well be believed, in a case of pharyngeal diphtheria it is common to find Klebs-Löffler bacilli on the nasal mucous membranes and in the discharges therefrom, and it would appear possible for them to produce two affections in this region, which, although they present similar appearances on superficial examination, nevertheless differ largely in their general features. We may have a case in which the nasal cavity contains thick membranes, and yet there are no other constitutional symptoms, or we may find a case which presents similar appearances, but in which most acute and malignant symptoms may develop. It is also possible to have a primary nasal diphtheria.

We now come to the most interesting form of diphtheria. "laryngeal diphtheria," which for a long time was confounded with what is now known to be a different disease—laryngismus stridulus. Indeed, it is still often known as "membranous croup."

The symptoms of both diseases are very similar. The

patient, usually a child, feels out of sorts and has a cough, usually for a day or two before anything of importance is noted, then suddenly the attack comes on with intensity. The cough becomes hard and "brassy" in character, respiration is impeded, at first only inspiration, but after a while expiration as well, and the voice is reduced to a whisper. With every inspiration the ribs and lower intercostal spaces are sucked in, the patient, as a rule, becomes livid, the temperature rarely rises much, but the pulse becomes very rapid, probably on account of the violent efforts at respiration. In favourable cases the paroxysm passes off, the child goes to sleep, and in the morning wakes up feeling fairly comfortable, but, as a rule, slightly weakened. In grave cases, however, the lividity increases, exhaustion becomes excessive, and the patient dies from CO₂ poisoning.

It is almost impossible to differentiate this type of diphtheria from croup until a culture can be made from the throat.

Concerning diphtheria of other parts than those described, we may find the conjunctiva affected; and a case came under my notice in which, taking the tonsils as its starting point, the membrane grew along the soft palate and uvula and along the pharyngeal walls, thence into the nose, up the left nasal duct, and finally into the eye, where it set up conjunctivitis, followed by panophthalmitis.

The external auditory meatus is also sometimes attacked, and otitis media, with perforation of the ear-drum, is also sometimes found. Diphtheria of the skin about the mouth, anus and genitals is also sometimes seen, but of this I can say nothing, as a case has not yet crossed my path.

The complications of diphtheria are many, the most important being those affecting the lungs, heart, and kidneys.

In nearly all fatal cases of diphtheria capillary bronchitis with pneumonia is found, and, in some cases, septic pneumonia, collapse and gangrene of the lung are met with. The affected throat may ulcerate, and, in some cases, become gangrenous.

With regard to cardiac complications, bradycardia and tachycardia may be found, but heart failure arising from

acute dilatation or cardiac paralysis may occur either in the height of the disease or as a sequela. Heart symptoms come on, as a rule, very suddenly, and it would be hard to believe, unless one had seen it, that dilatation could occur in such a short space of time.

In a case which came under my notice a child of three, well advanced in her convalescence, had been allowed to get up for a short time, and to play with her toys on the floor of the ward. Her heart, in the usual routine of the hospital, had been examined about 10 a.m., and found normal. At 2 p.m. she became weak, nearly lost consciousness, and her heart was found to be dilated to beyond the nipple line.

Albuminuria is also a serious complication of diphtheria. It occurs in two forms—Firstly, as ordinary febrile albuminuria, and secondly, as parenchymatous nephritis, with very large quantities of albumin, blood, and casts in the urine. In this last form it is most serious, and frequently becomes permanent.

The last and most important sequela is paralysis. It is a toxic neuritis, and can be produced by injecting the toxin obtained from the Klebs-Löffler bacillus into animals.

Any muscles can be attacked, but most commonly the soft palate is the first part of the body which is noticed to be affected, as, by its failure to act, the voice becomes nasal in character, and food regurgitates through the nose. Deglutition may be also embarrassed owing to paralysis of the pharyngeal constrictor muscles. Facial paralysis and paralysis of the extrinsic and intrinsic muscles of the eyes have been noticed. This paralysing effect is sometimes the cause of death when it attacks muscles whose action is essential to life, such as the heart, intercostal muscles, or diaphragm. In fact, one of my own cases, a child of nine years old, who had so far recovered that she was about to leave hospital the next day, was found dead by the nurse, who had left the ward a few minutes before to carry in the patients' dinners. Death was supposed to have been caused by diaphragmatic paralysis, as no other lesion could be found to account for it.

Up to this stage, although frequent reference has been made to the membrane found on the affected surfaces, and

which is one of the characteristics of the disease, nothing has been said as to the nature of this structure.

Many authorities say that it is necessary that there should be some superficial lesion of continuity in the mucous membrane in order that the bacilli may have some basis from which to start their injurious process of work.

Whether this is the case or not is still a matter of controversy. But, supposing the organisms to have obtained a foothold, the first process to be started by the toxin they produce is a necrosis of the superficial epithelium with which it comes in contact, the deep cells of the mucosa being afterwards affected. The second step is the result of the inflammation set up by the first process, and consists in an emigration of leucocytes, which eventually, in company with the dead epithelial cells, undergo a hyaline transformation. This hyaline transformation has been termed by Weigert "coagulation-necrosis," and is accompanied by a fibrinous exudate derived from the neighbouring tissues, which, in a measure, has a localising effect on the action of the poison and prevents its spread to deeper layers. With regard to the treatment of diphtheria, it may be said that there are as many methods as there are practitioners. They may all, however, be divided into three divisions — 1. Hygienic; 2. Local; 3. General.

Hygienic measures should be carried out as follows:— The patient should be isolated from the rest of his family in a well-lighted, airy room, from which everything, except such articles as are absolutely necessary for his comfort, has been removed. The air should be kept at an even temperature of about 68°, and also should be kept moist by means of a steam kettle.

The local measures to be adopted are those directed to the removal and destruction of the membrane, and also to the disinfecting of the mouth, throat, and surrounding cavities.

The membrane may be removed by actual force gently applied, and by irrigating and swabbing with antiseptic lotions, which would appear to be most efficacious when applied in an alkaline condition, owing to the fact that mucus is dissolved by solutions of this nature. To render

the throat aseptic we must act in no half-hearted way, but use the strongest antiseptic that can with safety be applied, by means of a spray or on a swab of wool bound to the end of a stick—perchloride of mercury in aqueous solution, up to a strength of even 1 in 500, having been used with marked success. Swabbing or spraying should be done three or four times each day. It is well also to be mindful of the fact that the Klebs-Löffler bacillus is retarded in its growth by acid being present in its neighbourhood, hence the following plan may be tried:—Irrigate out the cavities with alkaline antiseptic lotions in order to soften the mucous constituents of the membrane (*e.g.*, glyc. acid. carb., 3vi.; sod. bicarb., 3ii.; aquæ, ad 3vi.) and endeavour by gentle manipulation to remove parts of the membrane, and immediately after this apply strong perchloride of mercury on a swab.

Burney Yeo advises that a spray, similar in composition to that of the alkaline antiseptic lotion mentioned above, be constantly kept playing in front of the patient from a steam kettle.

With regard to general remedies, the great consensus of opinion seems to be in favour of perchloride of iron. For a child of three years old the following mixture seemed beneficial:—

R. Tinct. ferr. perchlor.	-	-	m v.
Potassii chloratis	-	-	gr. ii.
Syrupi	-	-	m xx.
Aquæ	-	-	3 ss.
Ft. mist.	M.		

Every three hours.

Benzoate of sodium has also been advised by many authorities, but I have never seen it have any very marked effect.

Cardiac symptoms must be met by suitable treatment. A mixture containing digitalis and caffein seemed to give excellent results in cases under my own observation, but in children caffein alone in two grain doses in a tablespoonful of port wine worked well, if given frequently. Nephritic symptoms must be treated by the usual remedies, and the lungs must be also carefully watched, and, if necessary, attended to.

With regard to intubation and tracheotomy, in cases where suffocation is imminent no time should be lost, but a point has been demonstrated to me, by a practitioner of large experience in such cases, which is of some interest, as it may help us in our prognosis as to the result of the operation. He stated that if, on inspection before operation, the lower ribs and intercostal spaces were sucked in by the effort at inspiration we might hope for success, but if, on the inspiratory effort being made, no matter how strong it might seem, no such phenomenon was observed, the hopes of a successful result of operation were very slight.

The introduction of the antitoxin treatment of this disease has reduced its nature from being one of the most virulent character to one of comparative innocence. Issued, as this substance is, in small bottles ready for use, and sent out in quantities suitable for immediate injection, and as the operation needed is so simple and fraught with so little danger or discomfort to the patient, it would seem a pity that all cases, which have even a suspicion of diphtheria about them, should not be inoculated with a suitable dose as a matter of routine.

But it might be well at this point to sound a note of warning.

Two infants were admitted who had been inoculated previous to their entrance by the physician in their neighbourhood, and both died of gangrene of the lower lobe of the right lung as a result of the needle penetrating from the lumbar region into the thorax. This may seem incredible, but when one considers the thinness of a small infant's parietes, and the fact that the child probably jerked about during the injection, we may, perhaps, be more careful than we otherwise might be when injecting antitoxin into the lumbar region of a child.

Holt gives the following directions for the use of antitoxin:—"For children over two years old the initial dose should be from 1,500-2,000 units, in all severe cases. . . . This dose should be repeated if necessary in 24 hours if no improvement is seen, and again in 24 hours if the course of the disease is unfavourable. Exceptional cases of great

severity, especially when seen late, should receive somewhat larger doses than those mentioned—*i.e.*, 3,000 units.

One-tenth cc. of what Behring calls his normal serum will counteract ten times the minimum dose of diphtheria poison fatal for a guinea-pig weighing 300 grammes. One cc. of this normal serum is called "an antitoxin unit."

ART. XIV.—*Case of Primary Cancer of Liver in Girl aged twenty-one.** By W. J. THOMPSON, M.D., Dubl., F.R.C.P.I.; Physician to Jervis-street Hospital.

CANCER of the liver is not by any means an uncommon disease, but primary, or secondary, cancer of the liver at the age of twenty-one years is rarely ever met with, and so we considered this case of sufficient interest to bring before the Pathological Section. Murchison, in his historic record of cases, mentions only two of primary cancer—one aged forty-two and the other aged fifty. He also records a case in a patient, aged twenty-four, who had well-marked pyrexia, but at the autopsy there was a cancerous mass found in the neighbourhood of the left kidney which extended down along the vessels to the testicle. He states that when cancer first commences in the liver, other parts, notably the mediastinal, inguinal and cervical glands and the lungs are apt to become secondarily affected. Coming to more recent times, Dr. Hale White, in the chapter on "Tumours of the Liver," in Professor Allbutt's "System of Medicine," deals with statistics relative to cancer of the liver very fully. He states that at Guy's Hospital during the nine years 1885 to 1893, out of about 4,200 *post-mortems* secondary cancer of the liver was found in 136 cases, 126 of which were carcinomatous. He further states that during twenty-four years, from 1870 to 1893, out of about 11,500 *post-mortems* made at the same hospital, only eleven cases of primary cancer were discovered, or about 10 per cent. The proportion of primary to secondary cancer is about one to twenty-five. The age of the youngest case recorded was twenty-three. He also states that out of

* Read before the Section of Pathology in the Royal Academy of Medicine in Ireland, on Friday, February 27, 1903. [For the discussion on this paper see page 306.]

seven cases recorded in the Pathological Society of London during a period of twenty sessions, the youngest case reported was thirty-three years. He makes a remarkably interesting statement when he said that in none of the recorded cases of primary cancer was there any family history of the disease, also that the greater number of cases occurred in men.

CASE.—Mary R., aged twenty-one, was admitted to Jervis-street Hospital on October 31st, 1902. Her family history, which was reliable, was good, none of her people having died from cancer or tuberculous disease, nor was there any history of lunacy in the family. She had always been strong and healthy, and until admission was employed in a bottling store in a distillery. About four months previous to this she first commenced to complain of gastric disturbance, uncomfortable feeling after food, vague epigastric pains, vomiting, and on one or two occasions she stated she vomited blood. Her stomach trouble becoming worse, and feeling unable to follow her occupation—in which she had a good deal of stooping and leaning forward to do—she was sent into hospital as a case of probable gastric ulcer.

On admission the liver was found to be uniformly enlarged, smooth on the surface, no pain on deep pressure. It extended about one inch below the costal cartilage and almost filled the epigastric region. The abdomen was not distended, nor could any hard nodules or tenderness or fluid be detected in it. The patient could not point to any localised painful spot in the region of the stomach. The tongue was coated; pulse, heart sounds, and temperature normal. The amount of urine secreted each day averaged forty ounces. It was normal in colour, free from albumin or sugar, but contained urates. The uterine functions were normal. The bowels were not constipated, and the motions did not show any liver disturbances. Professor McWeeney examined the blood and found it practically normal, with very slight polynuclear leucocytosis. It was quite evident the gastric disturbance was due to pressure, and this remained her most distressing symptom all through her illness.

After admission the liver enlarged rapidly, but remained free from pain. She complained of a dragging sensation in her right side. She was unable to take and retain nourishment, and she lost flesh rapidly. Six weeks after admission ascites appeared, and a couple of weeks after this slight jaundice supervened, which,

however, never became well marked. Except for the weight and pressure of the enormously enlarged liver she never complained of actual pain in the liver, nor could it be detected on pressure. About the same time the ascites appeared slight nodules could first be felt, and these in a short time were well marked. Before death, which occurred on January 18th, 1903, the liver extended as far down as the umbilicus, and when removed from the body weighed 197 ounces. The temperature remained normal until ten days before death, when it fluctuated very much, sometimes going up as high as 103 degrees. Her illness lasted altogether about seven months. At the autopsy the abdomen was filled with dark-coloured fluid; there were no enlarged glands; the lungs, kidneys, and spleen appeared normal; the ovaries were slightly enlarged, the left one more so than the right. I greatly regret they were not kept for Professor McWeeney, as I had intended.

Looking at the case from a clinical standpoint, the prominent interesting facts are:—(1) Age of patient; (2) absence of any family history; (3) painless character of the enlarged liver; (4) lateness at which the ascites, the nodules, and the jaundice appeared.

ART. XV.—*A Case of Splenic Anæmia.** By GEORGE PEACOCKE, M.D., F.R.C.P.I.; Assistant Physician, Adelaide Hospital, Dublin.

"ANÆMIA SPLENICA is a disease characterised by a progressive oligæmia arising without appreciable cause, which gives rise to grave disturbances of all the organic functions—to œdemas, hæmorrhages, irregular fever; followed constantly by death; accompanied by notable tumefaction of the spleen and also of the liver, a tumefaction independent of any preceding morbid condition and not associated with any leucæmic alteration of the blood." Such is the definition of the disease as given by Banti in the year 1882, to whom is due the credit of having first given to the profession any complete account of the affection. Prior to his article, isolated cases had been described by Woillez as far back as 1856, and by Collin, Wunderlich and Griesinger, Mueller, Landouzy, Pye-Smith, and Strümpell.

* Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, March 13, 1903.

but they had received little recognition. More recently Bruhl has written an exhaustive account of the disease in the *Archives générales de Médecine* for 1891, under the title "Splénomégalie Primitive," including in his article the history of fourteen cases, and "A Critical Summary of the Literature on Splenic Pseudo-Leukæmia" appears in the *American Journal of Medical Science* for 1899 from the pen of Sippy.

The disease now finds a place in all text-books of medicine, but as yet the total number of recorded cases is small; according to Dr. West, it probably does not exceed thirty. The notes of the following case may therefore be of interest:—

On June 8th, 1902, a man, aged forty-five years, was admitted into the Adelaide Hospital under my care. He lived near Tralee, in Co. Kerry, and was by occupation a farmer. His family history revealed nothing of importance, and until the commencement of his present trouble he had been a perfectly healthy man, with the one exception that about thirty years ago he suffered from an attack of typhus fever.

The history of his illness is very brief. He does not remember when he first felt any symptoms, but thinks that for the six months previous to admission to hospital he had been gradually getting weaker, less able for his work about the farm, easily made breathless by exertion. He also felt what he described as a "gurgling pain" in the left side, and at intervals had rather sharp paroxysmal pain in the same side. He further noticed that his trousers round the waist were becoming tighter, and that, while given plenty of room for expansion by the local tailor, he had recently to keep one or two of the top buttons undone. So little did his symptoms trouble him that it was not until about three weeks before admission that he consulted a doctor. He had a more severe attack of pain in the side than previously, and his wife insisted on his obtaining medical advice. When examined a tumour was felt in the abdomen, and he was advised to come up to Dublin without delay. His appearance when I saw him was not suggestive of any serious mischief. He was a well-nourished man; the skin of his face, bronzed by constant exposure, perhaps hid the anæmia which was present. His pulse was regular, good volume, 84 per minute; temperature normal; heart sounds healthy; lungs normal. On examining the abdomen a large prominent tumour was seen occupying almost the entire left side of the abdomen.

On palpation it was smooth on the surface, but a distinct friction rub could be felt ; the lower end was rounded, and extended to within two fingers' breadth of the crest of the ilium ; the upper end was lost under the costal arch ; a distinct notch was palpable on the anterior edge, close to the umbilicus. The tumour did not move on respiration, nor was it tender to the touch. It was uniformly dull on percussion over the tumour. The friction rub so easily felt was very distinct on auscultation. The urine was acid, sp. gr. 1024, and contained a trace of albumen.

Concluding that the tumour was the spleen, no accurate diagnosis was possible until a blood count was made, so accordingly on the 11th of June, with the assistance of Prof. J. Alfred Scott, the blood was examined. The following was the result :—Red blood corpuscles, 4,250,000 per cb. mm. ; hæmoglobin, 60 per cent. ; leucocytes, 1 in 1,000. The more exact examination of the leucocytes showed :—Eosinophils, 4 per cent. ; polymorphonuclear leucocytes, 39 per cent. ; mononuclear leucocytes, 4 per cent. ; lymphocytes, 53 per cent. The leucocytes were rather fewer than normal, but there was a distinct relative increase of lymphocytes ; otherwise the blood conformed to the chlorotic type. The case was evidently not one of splenic leucocythæmia.

The absence of wasting and of secondary growths elsewhere was against malignant disease of the spleen. The patient had never been in a malarious country. There was no evidence of tuberculosis, nor were there any symptoms or signs suggestive of cirrhosis of the liver. There was no history of syphilis.

I, therefore, came to the conclusion that the case was one of splenic anæmia.

In Clifford Allbutt's "*System of Medicine*" the symptoms of this disease are given by Dr. West. He divides it into three stages :—

The initial stage, in which the symptoms are those of extreme anæmia, with great loss of muscular power, and some wasting of muscle, though usually without emaciation.

The second stage is characterised by progressive enlargement of the spleen, and by attacks of severe pain in the splenic region ; the anæmia is more profound, the loss of strength is extreme, and the patients are liable to repeated attacks of bleeding, especially from the nose ; the temperature is raised, and of a hectic character.

In the last stage the condition is one of progressive asthenia, which ends in death; there is in it nothing especially characteristic.

The affection occurs much more frequently in men than women, in the proportion of 4 to 1, and is a disease of adult life. The blood usually displays the character of that found in chlorosis, but as the disease advances the reduction in red cells becomes more pronounced. Perisplenitis is fairly constant, often giving rise to considerable pain and tenderness. Dr. Bruhl says: "It is the painful crisis which is the first symptom which causes unrest. It is that which shows the commencement of the malady."

The liver is not infrequently somewhat enlarged.

Vomiting, nausea, constipation or diarrhœa have all been noticed. The tendency to bleeding is pronounced; the hæmorrhages are rarely profuse and more of the nature of oozing.

Epistaxis is very frequent and usually one of the earliest symptoms.

The temperature is often elevated and of a hectic type, but Bruhl says that fever is unusual.

The nervous system yields to special symptoms; urinary changes are indefinite; sometimes albumen is present in small amount.

The circulatory system presents only such changes as are common to all forms of anæmia.

The one important and apparently almost constant symptom which was absent in the present case was the tendency to hæmorrhage; the patient gave no history of any bleedings, and he had certainly none while in hospital.

The progress of the case during the first fortnight in hospital was not reassuring. I tried arsenic in increasing doses, as the only drug at all likely to be of service, but with no good result. The patient was becoming less able for exertion of any kind, partly from increasing breathlessness, and partly from the discomfort caused by the weight of the abdominal tumour. He also suffered considerably from pain in the side, and was perceptibly getting weaker. A blood count made on the 23rd of June showed that the red cells had further reduced to 3,500,000 per

eb. mm., and the hæmoglobin to 50 per cent. The white cells were unaltered. I therefore decided to delay no longer, and asked Mr. Gordon to undertake the removal of the spleen. This he successfully accomplished, and though an account of the operation does not properly belong to this Section of the Academy, I thought it would render the communication more complete to incorporate a brief summary of it as furnished to me by Mr. Gordon :—

“ On June 27th, 1902, I opened this patient's abdomen by a long incision through the left rectus muscle. I found the enormous spleen free from adhesion on its outer surface, and the few omental attachments at the lower end were easily separated.

“ The division of the splenic ligaments proved both difficult and dangerous. There was nothing of the nature of a pedicle, for the peritoneal reflection at the hilum measured fully six inches vertically. The real difficulty, however, was due, not to this, but to the fact that I could not turn over the spleen towards the right in order to bring into view the lienorenal ligament with the splenic vessels which lie in it. This was owing to the presence of posterior adhesions and to the great bulk of the spleen itself. It was then necessary to pass the needle from in front, and, unfortunately, in doing so I injured the splenic vein. The resulting hæmorrhage was appalling, and had not Mr. Heuston, who was assisting me, very promptly compressed the vessels, the patient would have died. This compression Mr. Heuston maintained until I had divided the remaining attachments between clamps and removed the spleen. I passed separate ligatures round each clamp, and a silk ligature including all.

“ There remained some bleeding points higher up in the under surface of the diaphragm. Time was a matter of much importance, for the patient was much collapsed; I thought it, therefore, best to pack the cavity with gauze and close the greater part of the abdominal wound as quickly as possible. I should add that I introduced a large drainage tube through a stab puncture in the loin.

“ I think I have told all of importance relative to the operation, and the after-history does not require detailed description. The gauze plugs were a source of some anxiety. I began by removing them very gradually—one or two strands each day—but in the end I was obliged to get on more rapidly, as suppuration had occurred about them. The patient left hospital on August 16th, and on August 24th he took a walk of ten miles.”

On the 12th of July, a fortnight after operation, a fresh blood count was made. The red cells were 3,750,000 per cb. mm., hæmoglobin 62 per cent., and white cells 6,300 per cb. mm., or 1 in 600. A month later the red cells numbered 4,400,000, the hæmoglobin 75 per cent., and the white cells were practically unaltered. After a stay of three weeks at our Convalescent Home, he returned to Kerry in apparently perfect health, a slight discharge still coming from a small sinus in the wound.

On the 13th of September I received a letter from him, in which he says: "I felt no inconvenience or fatigue whatever from the journey to Kerry; and since I came home I have been constantly walking about or standing, and notwithstanding this, I feel much better in health (mentally and bodily) than I have felt for years. I am maintaining the good appetite I had in hospital, am a sound sleeper, and I am, I believe, gaining in flesh rapidly—so much so that my friends tell me they had not seen me look so well for a long time."

I did not hear from him again until the 22nd December, when, in answer to a letter of mine asking him to come up to Dublin to let me examine him, he wrote—"Since I left the hospital I cannot say I have had an hour's sickness. I am up every morning at 6 o'clock, and do all the knocking about and marketing of the farm as well as ever I did. I am ploughing lea land for the last nine or ten days, and don't find it doing me any harm. The discharge is now stopped nearly a month, and I have also increased in weight over one and a half stone since I came home."

On January 10th, 1903, he came up to town, and on the following morning I examined him and found him in perfect health; his weight had increased two stone. Professor Scott kindly made an examination of the blood, which showed:—Red cells, 4,400,000 per cb. mm.; hæmoglobin, 85 per cent.; white cells, 6,600 per cb. mm. There were a few nucleated red blood corpuscles, normoblasts. The differential count of the white cells revealed—polymorphonuclear leucocytes, 61 per cent.; mononuclear leucocytes, 6 per cent.; lymphocytes, 21 per cent.; eosinophils, 12 per cent.

It will be noted that, whereas before operation there was a considerable relative increase of lymphocytes, this count, taken six months after removal of the spleen, shows a relative increase of eosinophils. The lymphocytes differed from those

usually found in normal blood, the proportion of cell body surrounding the nucleus being apparently much increased. The presence of normoblasts was also a new feature.

It only remains for me to mention the pathological appearance presented by the spleen after its removal, and for the following account I am indebted to Professor Scott, who kindly undertook the examination :—

“The spleen when removed showed a general enlargement preserving much the same shape as when normal. When laid on a table on the convex side, it became very slightly flattened, and measured 12 inches long by 8 inches wide, and 4 inches at its thickest part ; it weighed 8 lbs. 2oz. The capsule was very considerably thickened in a few places over the surface. In the other parts it did not appear to the naked eye to be abnormal. Section showed it internally to be fairly firm, and much paler than normal. Some dark marks or lines, which gave a marbled surface to the section, was all that could be seen of the spleen pulp. The light masses were round, almost regularly one millimetre in diameter, and covered the whole surface between the lines of the spleen pulp, and to the naked eye, or with a pocket lens, appeared to be Malpighian corpuscles.

“Microscopical examination showed that the Malpighian corpuscles were enlarged until they touched. The spleen pulp was absent ; special stains showed a number of red blood corpuscles at the junction of and slightly into the diffuse edge of the Malpighian corpuscle, this being the cause of the dark line visible to the naked eye. Careful examination showed that there was no increase of the trabecular or the reticular connective tissue, the only connective tissue increase being found in the patches of old perisplenitis. The general appearance suggested lymphadenoma rather than any other cause of splenic enlargement.”

In reviewing the literature of the subject, it is at once apparent that under the term splenic anæmia are included more than one distinct affection. The confusion is probably due to the fact that a combination of anæmia with splenic enlargement is by no means infrequent.

The term has been applied to the cases which occur in infancy and early childhood, and which, in nearly all instances, are associated with either rickets or syphilis. It has been used

to describe the condition that supervenes as the result of malarial infection. It is used synonymously with the term splenomegaly, a disease in which the enlarged-spleen is firm in texture, and shows microscopically a great overgrowth of the trabecular framework at the expense of the lymphoid tissue and Malpighian bodies—a disease which appears to be rather a primary affection of the spleen than a primary blood disease, and yet one which in its clinical symptoms very closely resembles the case I have brought under your notice this evening.

In my case, however, the pathological changes found in the spleen are totally different, suggesting, as Professor Scott says, a lymphadenoma rather than any other cause of splenic enlargement, and when we compare the changes found in the blood with those usually found in lymphadenoma, or Hodgkin's disease, the resemblance is very striking.

In both there is a diminution of red cells, with low colour index, or blood of a chlorotic type. In both the white cells, if not actually diminished in number, are not more than normal, and in both there is a marked relative increase of lymphocytes.

For want of a better name I have entitled my paper "A Case of Splenic Anæmia." A more accurate title would, perhaps, have been "A Splenic Form of Hodgkin's Disease."

ART. XVI.—*A Case of unusually Severe Measles in an Adult :
Second Attack.** By DR. J. J. BURGESS.

EPIDEMICS of measles are so frequent in their occurrence in this city, and their course, except in the extreme poor, so generally benign, that I have for a long time considered them as sinecures to the physician in attendance, merely requiring of him to see that his patients are isolated, kept warm, fed on a liquid diet, and dosed with a so-called diaphoretic mixture. I am aware we are sometimes brought in contact with desperate cases of broncho-pneumonia in our patients suffering from this disease, more frequently in some epidemics than others, despite, too, all our efforts at

* Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, March 13, 1903.

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prophylaxis. Yet when we consider the large number of cases which pass through our hands without any such untoward complication, I feel we must be led to regard its occurrence as exceptional. That it is a long lane which has no turning is exemplified by the following case, which I venture to think is worthy of being recorded by the exceptional features it presented :—

A married lady, aged thirty, nursed her eldest child through a somewhat sharper attack of measles than the ordinary. During the latter part of this time her second child, which had been isolated, sickened, and finally developed the same disease.

On the 5th November, the ninth day after the appearance of the rash on the first child, the mother felt very unwell with severe frontal headache, pain in the back and limbs, and great difficulty in swallowing from a sore throat. She told me that two days before, while going about exposed to the draughts of the house, a rash had come out on her chest, but disappeared the same day, and that she had a severe attack of measles years ago, when she was at school. On examination her temperature was 102·5° F., her pulse rapid, her palate presented no Koplik's spots; there was diffuse redness commencing at the anterior pillars of the fauces, extending over the entire soft palate; both tonsils were swollen and ulcerated on the inside. There was constant vomiting, irrespective of any food taken, some dry cough, great restlessness, and complete loss of sleep. No photophobia or conjunctivitis present. She was at this time menstruating.

Her condition was practically the same until the 7th inst., when, on my morning visit, I found the rash of measles faintly marked at the angles of her mouth. Her temperature in the afternoon rose to 104°. The vomiting, restlessness, and insomnia were continued, uninfluenced by the treatment adopted, the kidneys and bowels acting normally.

The rash came out very slowly; its colour, especially on the extremities, was that of mahogany. The face was livid, with considerable cedema of the areolar tissue, seeming twice its normal size. The conjunctivæ were intensely infected, giving the eyeball the appearance as if a hæmorrhage into the sub-conjunctival spaces had taken place. The rash did not extend to the lower extremities until the third day of its appearance. The prominent symptoms at the time were the high temperature, the insomnia,

a hard cough which caused great distress, and the frequent vomiting, not even iced water being retained.

On the 9th inst. (the third day of the rash) I had the benefit of Sir Francis Cruise's opinion, who joined me in the further treatment of the patient. He at once pronounced the case as one of very severe measles.

The next day (fourth day of the rash) there was suppression of urine, none having been passed during the night, and the bladder was found empty on the passage of a catheter. A diuretic mixture of nitrate of potassium being administered, the renal function was established during the day, and the temperature appeared to be falling.

The following morning the temperature at 8 a.m. had fallen to 100°; but when Sir Francis Cruise and I saw the patient at 12 it had risen to 103°, and again suppression of urine was present. We dry-cupped over the loins; the resulting discoloration of the skin was deep brown in colour. We continued the nitrate of potassium mixture with the addition of infusion of digitalis. As I did not like the symptoms I returned at 4 in the afternoon. I was told the kidneys had acted, and was shown about half a pint of smoky-looking urine in a vessel. Instead of finding her better, as I expected from the above, her temperature was now almost 106°, pulse galloping, and she was in a condition of stupor. Seeing there was no time to be lost, and fearing an uræmic convulsion at any moment, I rapidly, with the assistance of the nurses, wrung out a blanket which had been steeped in almost boiling water, took her clothing off, wrapped her up in the hot pack and placed several dry blankets around her. This done, I prepared a hypodermic injection of pilocarpin, but gave the pack twenty minutes, to see if it would act before administering it. Before that time had elapsed I was joined by Sir John Moore, who came in Sir Francis Cruise's absence. On examination we found the skin perspiring freely, and decided at present not to give the pilocarpin. She was put on 15 gr. doses of benzoate of sodium in hot water and, strange to say, this rather nauseous dose was the first for many days which the stomach retained. Four hours later the temperature was 103°, the skin freely acting, so we removed the pack and wrapped her up in warm blankets.

Next day we again found there was suppression of urine, none having been passed since the previous afternoon; this, however, gave way at noon, and was the last of this dangerous com-

plication we were to see in our patient. The temperature at night still kept up, presenting a pyrexial condition, which I am sure many here besides myself have seen following even mild cases of measles. The pulse took somewhat longer than the temperature to return to 72, her normal rate; but finally, convalescence being established, she grew rapidly well, and, except for some muscular weakness of her legs, presented no sign to indicate what a fight she made for her life.

This case I consider somewhat peculiar for the following:—

1. The prevalence of scarlatina symptoms in the course of a case of measles, although the rash as it came out was undoubtedly measly, yet the inflamed throat, ulcerated tonsils, the continued vomiting, the kidney phenomena, and, later on, the coarse desquamation would collectively make me doubt my own diagnosis were it not corroborated by physicians of such experience as Sir Francis Cruise and Sir John Moore. I may here mention parenthetically the same symptom of vomiting throughout the attack was also present in the cases of both children, in whom the other appearances left no doubt whatever of the nature of the disease. This symptom persistently occurring during an attack of measles I have never seen before, nor can I find any reference to it in the text-books.

2. The rash came out very slowly, and did not extend to the feet until the third day. Its character was petechial: as I mentioned before, its colour was deep brown.

3. The renal complication, which is most rare in measles. According to Professor Nothnagel's book only two cases are recorded by Henoch. The urine after the period of suppression was for a long time scanty, not exceeding 30 ozs. in the 24 hours; was smoky, contained phosphates; at a later date abundant urates; but at no time could we find albumen. That which was voided immediately after the suppression contained 10 gr. solids to 1 oz.

4. The rapid cardiac action, without pulmonary complications, pointed to the toxic forms of measles alluded to by Allchin.

5. The spasmodic cough, resembling pertussis, which followed the acute stage, and persisted during convalescence—a constant feature in my experience in the last epidemic.

6. The continual insomnia and restlessness, over which none of the drugs employed seemed to have the very slightest power. The following were tried, singly and combined:—Opium before the renal symptoms occurred, chloral-sulphonal, the bromides.

7. The high range of temperature culminating in hyperpyrexia, terminating by protracted lysis. The latter is a condition found frequently associated with measles.

In the treatment two things appeared to do good—the internal administration of benzoate of sodium, which stimulated the renal function; and probably the hot pack, which warded off uræmia and cardiac failure from the high temperature.

CONGENITAL VARIOLA.

It is a well-established fact that a pregnant woman attacked by variola may transmit the disease to the foetus. In many cases the infant escapes the contagion, and presents after birth a remarkable immunity against inoculation. Besides these cases, there are others where the infant is attacked by variola before birth, and comes into the world with cicatrices or a well-marked eruption upon it, or the eruption may develop itself a short time after birth. It is also possible for the foetus to be infected without the mother contracting the disease. In M. Jaconnet's case the woman, aged twenty-six, had been vaccinated at birth, but never re-vaccinated. She was confined on the third day of her illness, and before the ordinary papular eruption had appeared. The attack was a mild one. The infant was born at full term, and was not vaccinated. Eight days after its birth the child presented some redness, which had spread to the whole body by the following day. The child was admitted to hospital on the thirteenth day after its birth, and had then a confluent vesicular eruption on the face and a very extensive papular eruption on the body and limbs. She died three days later from a confluent attack of variola. If three days are allowed for the period of invasion, the attack of variola began five days after birth, and death occurred on the twelfth day of disease; the infection of the foetus and a part of the period of incubation was passed *in utero*. The case is an unusual one, and it is interesting to note that the attack of variola, which was benign in the mother, was transmitted to the child with such an intensity that it died from a generalised confluent attack.—*L'Écho Médical du Nord*, Dec., 1902; and *Treatment*, Jan., 1903.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Elements of Pharmacy, Materia Medica, and Therapeutics.

By WILLIAM WHITLA, M.A., M.D., Professor of Materia Medica and Therapeutics in Queen's College, Belfast ; Senior Physician to, and Lecturer on Clinical Medicine, Royal Victoria Hospital ; Consulting Physician to the Ulster Hospital for Women and Children ; Consulting Physician to the Belfast Ophthalmic Hospital ; Examiner in Materia Medica, Royal University, Ireland ; &c., &c. With Woodcuts. Eighth Edition. London : Henry Renshaw. 1903. 8vo. Pp. 637.

DEDICATED to Sir William Thomson, C.B., M.D., Ex-President of the Royal College of Surgeons in Ireland, "in recognition of his many services to the Medical Profession at home, and to the Empire in South Africa," this eighth edition of Sir William Whitla's most popular text-book bespeaks a cordial welcome at our hands.

The seventh edition was out of print for nearly a year—we forecast that this edition will soon be exhausted also. A great deal of the volume has been re-written ; all of it has been carefully revised and brought well up-to-date.

By increasing the size of the page, and using a larger and clearer type, the work now forms a companion volume to the author's well-known "Dictionary of Treatment."

The section of the present edition which has been most enlarged and developed is Part V. on "Non-official Remedies." In it will be found all the new remedies which have established their reputation, and a few which have not done so. Some of the drugs included in this list are now quasi-official, as they appear in the Indian and Colonial Addendum to the British Pharmacopœia (Government of India Edition, 1901). We are glad to find the author speaking favourably of "aspirin," or salicylo-acetic acid as an anti-rheumatic and anti-neuralgic. The chief advantage it has over the salicylates is that it is

more slowly eliminated by the synovial membrane. It passes through the stomach unchanged, and is absorbed in the small intestine. Georges has recently reported as to its value in chorea, and in 10 or 15 grain doses it has proved of use in acute rheumatism in our own hands.

An "Index of Poisons and their Antidotes," reprinted from the author's "Dictionary of Treatment," brings this excellent work to a close.

The Mycology of the Mouth : a Text-book of Oral Bacteria. By K. W. GOADBY, D.P.H. Camb. ; M.R.C.S., L.D.S. Eng., &c. London : Longmans, Green & Co. 1903.

THERE is, perhaps, no better proof of that advancement which the profession of dentistry has made within recent years than the appearance from time to time of works, unquestionably valuable, scientific, and reliable, bearing upon one or other of its many sides. Of such we have reviewed, within these pages, not a few during the past year, worthy, each of them, to find a place in the modern practitioner's library, and under this category must, we think, come the present manual. The author—himself an acting dentist—has given us a handbook upon the micro-organisms of the mouth, full, comprehensive, and detailed, their life histories, various forms, means of distinguishing, rearing, and cultivating, all being fully gone into. This work has evidently also been written as a practical guide to the student of the subject, for many pages have been devoted to the description of methods, apparatus, formulæ, &c., used in the pursuit of bacteriological investigation, while these, with the numerous minute organisms themselves, are the more readily appreciated by means of the many beautifully reproduced photographs and cuts inserted throughout the 200 odd pages constituting the book.

In addition to the special oral bacteria, numerous other forms, occasionally found in the mouth, are very fully considered and illustrated—e.g., *B. influenzae*, *B. of Friedländer*, *B. tuberculosis*, &c. The bacteriology of pyorrhœa alveolaris has not been neglected, a short chapter upon this disease finding a place, so also one of much greater length upon dental caries.

Nothing has been omitted by the publishers to detract from the excellence of Mr. Goadby's book, its general appearance being pleasing. We can confidently recommend its pages as worthy the study of those interested in the subject.

Practical Points in Gynaecology. By H. M. MACNAUGHTON JONES, M.D., M.Ch., Master of Obstetrics (*Hon. Caus.*). Royal Univ., Ireland; F.R.C.S.; &c., &c. Third Edition. Pp. xii. and 188. With 24 Plates. London: Baillière, Tindall & Cox. 1902.

As this is the third edition of Dr. MacNaughton Jones's work which has appeared within a couple of years, the task of reviewing it is an easy one. His book is full of information of a most practical kind, and will be of use not alone to the specialist but to the general practitioner, a fact which is amply demonstrated by its popularity. The present edition contains, in addition to the contents of the former editions, the results of the experience gained by the writer during visits to many of the foreign clinics. We can strongly recommend it to all who are interested in operative gynaecology.

A Text-Book of Obstetrics for Practitioners and Students. By J. C. CAMERON, M.D.; E. P. DAVIS, M.D.; R. L. DICKINSON, M.D.; H. J. GARRIGUES, M.D.; BARTON COOKE HIRST, M.D.; CHARLES JEWETT, M.D.; H. A. KELLY, M.D.; R. C. NORRIS, M.D.; C. D. PALMER, M.D.; G. A. PIERSOL, M.D.; E. REYNOLDS, M.D.; H. SCHWARZ, M.D.; J. C. WEBSTER, M.D.; R. C. NORRIS, M.D., Editor; and R. L. DICKINSON, M.D., Art Editor. Two Vols. Pp. 554 and 546. With nearly 900 Illustrations. Second Edition, Revised. London and Philadelphia: Saunders & Co. 1902.

THE first edition of the work before us was well known as the pioneer of the modern well illustrated work on obstetrics, and as such attained a not inconsiderable reputation. It is safe to say that at the date of its appearance there was no other work on obstetrics illustrated in anything so complete a manner, and, though since that time many well illustrated

works have appeared, the Norris Midwifery—as it is usually known—is still able to hold the position it won for itself.

The present edition of the work has undergone a thorough revision, evidences of which are to be found on every page; several of the illustrations have been re-drawn, while others have been added. Dr. J. Clarence Webster has been added to the list of contributors, and has re-written the article on “Diseases of the Ovum,” and on “Premature Expulsion of the Uterine Contents,” which were contributed to the former edition by the late Dr. Etheridge.

For the work as a whole we have a large mead of praise. It is, of course, unavoidable that when many contributors unite to produce a single work there are many overlappings, and some inconsistencies; but, on the other hand, the reader has placed before him the opinions of the most eminent American obstetricians. The illustrations alone render the work worthy of a place in the library of every practising obstetrician, while as a work of reference it is valuable in the highest degree to both the specialist and the general practitioner.

Golden Rules of Refraction. By ERNEST MADDOX, M.D.

Golden Rules Series No. xii. Bristol: John Wright & Co.

London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd.

“THIS tiny volume is,” says the author, “intended chiefly for the help of general practitioners, who may be commencing the study of refraction,” and “may be regarded as a little miniature of a subject to which only a large volume could do justice.”

We have a great objection, as a rule, to these “tiny volumes,” as they are so liable to produce mental dyspepsia; but in spite of this we feel bound to say that Dr. Maddox has succeeded in making his subject tolerably digestible, and, if taken in small doses, and pondered upon judiciously, we feel sure that even a beginner in the art will, from its pages, gain much of the knowledge that he requires.

Dr. Maddox is such a perfect master of his subject that he has succeeded in doing what few could have done so well; he knows what to omit, and so can make even this miniature

convey much information without the usual dangers attendant upon the ingestion of concentrated essences of its kind. The work is perfection.

Aids to Gynæcology. By ALFRED S. GUBB, M.D. (Paris), M.R.C.S. ; late Resident Obstetrical Physician, Westminster Hospital ; Fellow of the Royal Medical and Chirurgical Society, &c. Fourth Edition. Tenth Thousand. Foolscape 8vo. Pp. 136. With 29 Illustrations. London : Baillière, Tindall & Cox. 1902.

THIS little work is an epitome of the signs, symptoms, and treatment of the diseases peculiar to women. It is clearly and concisely written, and is doubtless of value to many students, as its ready sale clearly shows. In the present edition the text has been re-written almost in its entirety, and several diagrams and illustrations of instruments have been added, as well as an appendix containing a therapeutical index. Although we do not, as a rule, regard works of this class as altogether suitable for the use of students, still, in those cases in which time forbids the study of a larger work, we can recommend Dr. Gubb's little book as reliable and accurate.

The Irish Technical Journal. A Record of Agricultural and Technical Education in Ireland. Edited by R. MACDONALD, M.A., B.Sc. Vol. I. No. 1. March, 1903.

WE welcome the first number of a Journal which may be productive of much advantage to the cause of technical education in this country ; and we congratulate the editor on the manly yet modest editorial in which he introduces this latest literary outcome of the great national movement which is at present passing over Ireland. He says :—

“ There is needed in Ireland a Journal to which one may turn for information as to what is being done in the country by the Urban, Municipal, and County Committees working under the Department of Agriculture and Technical Instruction.

“ Such a Journal should not only supply a steady stream of information, but should open its columns to a free expression

by the public as to the needs of Ireland, and how these needs should be met.

"Men who are well informed on special subjects, bearing on the work of the Department, should be able, through such a Journal, to address a larger audience than they would if their views were expounded to one local Committee.

"*The Irish Technical Journal* will exactly meet that want. In this Journal the general public, who are virtually interested in the success of Agricultural and Technical Education, will be able to follow its progress in Ireland.

"The peculiar needs of Ireland, its present opportunities, and its claims will be never-failing texts for its pages.

"The future prosperity of Ireland is bound up with the Education of her people; Technical Instruction, in all its forms, will play an important part in bringing that prosperity to pass; and the Journal will aim at promoting this branch of the National Education.

"It will be impossible to ignore political and sectarian differences; but they will not be debated. They will be taken for granted, like the weather, and the best made of them. That such a course is possible has already been demonstrated, for, throughout Ireland, the Agricultural and Technical Instruction Committees have steadily aimed at the general good; and this policy of the Committees will be adopted by the Journal."

Most heartily do we wish success to *The Irish Technical Journal*, for we recognise that the welfare of the Medical Profession is bound up with the prosperity of Ireland.

A Manual of Practical Medical Electricity, the Röntgen Rays, and Finzen Light. By DAWSON TURNER, M.D., F.R.C.P. Ed.; Lecturer on Experimental Physics, Surgeons' Hall, Edinburgh; Medical Officer in Charge of the Electrical Department, Royal Infirmary, Edinburgh. Third Edition, Revised and Enlarged. London: Baillière, Tindall & Cox. 1902. Pp. 396.

We are much pleased with this book and can recommend it. It is written in a clear and simple style, and, beginning with the most elementary matters, explains the subject in such a

way as to be intelligible to those who have not much acquaintance with the theory of electricity. It will, therefore, be found useful both as a text-book of medical electricity and also as an introduction to the subject suitable for medical practitioners. It is divided into six parts. The first treats of electro-physics; the laws of electricity, the kinds of electricity, and the various apparatus in ordinary use are explained. Many useful illustrations are introduced. Electro-physiology and electro-diagnosis are discussed in the next sections; then the surgical and gynaecological uses of electricity. In Part V., on electro-therapeutics, we note that Dr. Turner seems to have found that static electricity is, on the whole, more useful than galvanic or faradic currents, and mentions the practice of the Salpêtrière Hospital, where static electricity is chiefly used for therapeutical purposes; faradism much less, and galvanism serves only as a diagnostic agent. Part VI. is devoted to X-rays and Finsen Light treatment.

We think that in a work of this size a little more space might have been devoted to some of the details of the therapeutic applications of electricity. On the other hand, what we may call the scientific side of the subject—instruments, batteries, &c.—is excellently done. The illustrations and printing are excellent.

Transactions of the British Congress on Tuberculosis for the Prevention of Consumption. In Four Volumes. London: W. Clowes & Sons. 1902.

THESE volumes form a lasting monument of the labours of the Congress. Volume I. contains accounts of the general meetings and lists of delegates and members. Volume II. contains the reports of the work of the State and Municipal Section; and Volume III. that of the Medical Section. In it we find various novelties in the way of treatment, intravenous injections of formalin, of protargol, subcutaneous injections, intratracheal injections, doses of urea, and various other methods, of which probably only a few will stand the test of time. In this volume is also contained the report of the Section on Pathology and Bacteriology. In Volume IV. is printed the work of the Veterinary Section, containing most valuable papers and discussions on milk and meat.

PART III.

SPECIAL REPORTS.

SURGERY.

By WILLIAM TAYLOR, B.A., M.B., Univ. Dubl.; Fellow and Member of Council, R.C.S.I.; Surgeon to the Meath Hospital and County Dublin Infirmary.

ARTERIORRHAPHY FOR CURE OF ANEURYSM.

In the *Annals of Surgery* for February, 1903, will be found an interesting paper by Rudolph Mates, M.D., of New Orleans, describing an operation for the radical cure of aneurysm, based upon arteriorrhaphy. The principles which underlie the technique of this operation are simple. "The dominant and essential feature of the operation is that the aneurysmal sac is regarded as a large diverticulum or prolongation of the artery with which it is connected, that the lining membrane of the sac is a continuation of the endothelial intima which lines the interior of the artery, and that the sac itself, when not disturbed from its vascular connections, is capable of exhibiting all the reparative and regenerative reactions which characterize the endothelial surfaces in general when subjected to irritation."

The following are the steps of the operation as applied to peripheral aneurysms of the larger arteries :—

1st. A temporary hæmostasis is produced either by elevation of the limb for a few minutes to render it bloodless, and then, by the application of an Esmarch's rubber band, or by exposing the artery near the cardiac side of the tumour and compressing it by a padded forceps or with a traction loop. This method of applying pressure to the exposed artery has the disadvantage that it does not control the anastomotic circulation, which may communicate directly with the sac, and thus considerably embarrass the operator until it is controlled. In the case of carotid and other cervical aneurysms, the circulation is so free on the distal side that the circulation should also be controlled by pressure on the distal as well as the proximal side of the tumour.

2nd. When the circulation has been effectively controlled by one of these methods, a free incision, parallel to the long axis of the aneurysm, should be made through the skin, and deepened until the sac is exposed from pole to pole.

3rd. A free incision is now made into the sac, extending from one extremity of the tumour to the other in its longest diameter, and in the line of the main artery. Any blood and clots are then removed, and the interior of the cavity is freely exposed to view by retraction of its edges. In this way all the orifices which open into the sac will be exposed, while the type of sac itself will be disclosed. If it is a "fusiform" aneurysm, two large openings will be seen, usually at the bottom of the sac, separated by an intervening space of variable length, and frequently marked by a shallow groove, which represents the continuation of the floor of the artery. If the aneurysm is of the "sacculated" variety, one opening of variable size and shape will be seen, by which the artery communicates with the sac. This differentiation of the sac into these two varieties has most important bearings upon the further aims of the technique. In the "fusiform" type the artery blends so completely with the sac walls that its continuity cannot usually be restored. In such a case the object is simply to seal up the openings leading to the artery for purposes of hæmostasis and obliteration of the sac; whereas in the "sacculated" type, in which the sac communicates with the main artery by a single opening, it is quite possible to close the opening of communication without encroaching upon the lumen of the main vessel, thus maintaining the functional as well as the anatomical continuity of the artery. In fusiform aneurysms, the sac having been opened as already described, after the chief openings have been identified, careful search is made for the openings of any collateral branches, or branches springing from the sac, which, if not sutured, would give rise to troublesome hæmorrhage. The interior of the sac should be gently, but thoroughly, scrubbed with gauze soaked in sterilised salt solution, so as to remove any adherent laminated blood-clots which would interfere with the healing of the sutured surfaces.

4th. The orifices of the main vessel are then carefully closed with sutures. The suture material used is either silk (twisted,

braided, or floss), chromicised catgut, or even the finest kind of kangaroo tendon. The size of the suture must correspond with the size of the needle, which in turn should vary in size with the dimensions of the opening to be closed, and the density of the tissues to be sutured. The author himself prefers chromicised catgut (Nos. I., II. and III.). The needles are similar to the full curved, round intestinal needles. The suture may be either continuous or interrupted, the former being the more rapid, and just as effective. Eight to ten sutures used to the inch, the author states, are more than sufficient. In suturing wounds of normal arteries, very fine needles and silk should be used, and the sutures should enter the vessel $\frac{1}{16}$ to $\frac{1}{20}$ of an inch apart. In aneurysmal cases the conditions are different, for the aneurysmal tissues are so much thicker and more easily approximated. A most important point seems to be to secure a firm grip of the sac tissues so as to get good, broad approximating surfaces. "In dealing with the larger openings in this class of aneurysms, the needle should penetrate at least $\frac{1}{4}$ or $\frac{1}{2}$ of an inch beyond the margin of the orifice, and then, after reappearing at the margin, dip again into the floor of the artery, and continue to the opposite margin as in the start. This mode of occluding the orifice of the main artery will secure a very complete apposition of a large marginal area, including the floor of the artery, which is visible under the orifice. When the openings must be closed quickly, as in cases in which there is considerable bleeding from collateral vessels, the dip of the needle into the floor of the vessel may be omitted, and the margins of the orifices brought together quickly with a continued suture." In these cases of fusiform aneurysm the author has found it advantageous to extend the first line of suture from one orifice to another, when the intervening space is not too long. These sutures include the floor of the sac, and are applied on the Lembert plan; thus the transverse diameter of the sac is diminished, while a foundation is laid for the obliteration of the sac cavity which is to follow. If the floor is dense, rigid, or bound down by adhesions to unyielding parts, the sutures should be limited to the orifices.

5th. "The sacculated aneurysm is the most favourable for the display of the conservative value of arteriorrhaphy from

every point of view. The intrasaccular suture of the orifice not only permits the radical cure of the aneurysm by closing its nutrient orifice, but also favours the restoration of the affected artery to its functional and anatomical integrity. The suture is here not only occlusive but reconstructive." The same type of needle and suture material is used here in approximating the edges of the opening leading from the main artery into the sac. "The needle should be made to appear just within the lower edge of the margin, care being taken that when the sutures are tightened the caliber of the artery will not be encroached upon so as to obstruct its lumen, and that the sutures will not be brought in contact with the blood in the lumen of the artery. Greater care must be exercised in securing accurate coaptation in this class of cases than in the fusiform type previously described." It is advised to begin the line of suture at some distance from the orifice, in order to secure a broader and stronger line of approximation.

The 6th step consists in the removal of the means used to control the blood flow—the temporary constrictor. The interior of the cavity should now remain perfectly dry; the only change that should be noticeable is the development of a more pinkish colour of the sac. Any oozing capillary points will usually be stopped by pressure.

The 7th step consists in the obliteration of the sac and the application of the dressings. The obliteration of the sac is the same in all cases, whether fusiform or sacculated in type. In large sacs, where the floor of the cavity is deeply situated, and there is an abundance, or even redundancy, of material, it is advised to reinforce the first line of occlusive sutures by a second row, applied also on the Lembert plan at a higher level. This row will considerably reduce the dimensions of the sac. "The closure of the space is now readily accomplished by turning the relaxed flaps of skin into the interior of the cavity. These flaps, in their relaxed state, can be made to touch the bottom of the cavity with comparative ease; one or two relaxation sutures on each side of the median line will usually suffice to tack down and hold the skin flaps in contact with the bottom and sides of the sac." The principle is the same as that of Neuber's method of closing bone cavities with cutaneo-periosteal flaps.

In cases of abdominal and iliac aneurysms, in which obliteration of the sac by inversion of the walls of the sac with the overlying skin will not be practicable, the same object will be obtained by inverting the sac walls with the overlying peritoneum which covers the aneurysm. "The peritoneum is not to be separated from the sac, and is utilised in place of the skin flaps with greater ease and certainty of successful union than when skin is used." In other situations, in which the skin flaps will not stretch to the bottom of a deeply placed cavity without excessive tension, rather than imperil the vitality of the skin by overstretching, it will be safer to obliterate the sac itself with its own walls, independently of the skin, by the introduction of a second or third row of sutures after the closure of the orifices; then any superfluous sac wall is cut away, and the free edges of the sac approximated by interrupted or continuous catgut sutures. The soft parts are then brought together by separate rows of buried sutures, the skin incision being closed without drainage. These procedures the author has been able to put into practice on four occasions—two of direct traumatic aneurysm of the brachial, caused by gunshot wounds, one femoral, and one popliteal, these latter being of the spontaneous variety. The first of these dated back to March, 1888.

A further suggestion in regard to the technique of the operation in dealing with fusiform aneurysms with two orifices has been made by the author, but he has not yet had an opportunity to put it into practice. It is suggested that it would not be impracticable or unreasonable, when favourable conditions presented themselves, such as in the larger aneurysms, which offer an abundance of material and a flexible floor, to go a step further and re-establish the continuity of the arterial channel. The principle of this suggested operation is precisely that adopted in Witzel's method of gastrostomy. A soft rubber catheter or tube, corresponding in diameter to the size of the parent artery, is laid on the floor of the sac, and is inserted as a guide into the two orifices of communication. Two lateral folds of the sac are now raised from the floor on each side of this catheter or tube, by means of two sets of sutures introduced on the Lembert plan. These ridges or folds are to be raised high enough on each side of the guide

to cover it completely in the middle line. A row of sutures should then be placed in a series from one of the main orifices to the other, leaving the catheter *in situ* until all are placed. The sutures are then all tied, except two in the centre of the line, which are not tied until the guide is removed. Where possible a second row of sutures should be superimposed. The advantages of such an original and novel procedure are obvious where its applicability is possible.

OPERATIVE TREATMENT IN SPINAL INJURY,

In the *Philadelphia Medical Journal* for June, 1902, will be found an extremely interesting account of a case reported by Drs. Stewart and Harte. This case will rather tend to upset some of the axioms formulated for the surgeon's guidance as to whether operative treatment should be resorted to in connection with injuries to the spine. It has been laid down as a pretty hard and fast rule that when the spinal cord is either divided or crushed operative interference should not be undertaken, under the impression that the spinal axons had little or no power to regenerate. This case of Stewart and Harte would seem to prove the power of regeneration; consequently cases that were hitherto looked upon as absolutely hopeless and left to die, may now be subjected to operative interference with some prospect—no matter how slight—of recovery.

The case reported was that of a woman who sustained a gunshot injury in the back. The bullet entered near the seventh dorsal spine and lodged in the spinal canal. There was immediate and complete loss of motion and sensation below the tenth dorsal vertebra behind, and below a point about three inches above the umbilicus in front. Operation was undertaken three hours after the accident. At the operation it was found that the right lamina of the seventh dorsal vertebra was crushed and the left lamina fractured at its base. The spines and laminæ of the seventh and eighth dorsal vertebræ were removed, and the bullet was found lying between the severed ends of the spinal cord. The *débris* having been washed out with saline solution, it was found that the ends of the cord were separated from one another by a space of three-quarters of an inch. The ends were, with some difficulty, approximated by three chromicised catgut sutures—one passed antero-posteriorly through the entire thickness of the cord,

the other two being passed transversely. The dura mater could not be approximated. The muscles were united by catgut, and the skin by silk-worm gut. The angle of the wound was drained for twenty-four hours. On the fifth day after this pain was complained of in the knee, and pressure on the calf of the leg could be felt as a pulling sensation in the back. On the fourteenth day she was able to recognise flexion of the foot as such, and this was followed by a strong contraction of the leg. The "*cutis anserina*" on exposure to cold was also noticed, while she was able to feel deep pressure over the limbs and abdomen. On the twenty-first day she was able to tell when her bladder was full, but could not empty it. On this day also the patellar reflex was detected. From this time on the progress was steady, but slow. On the sixtieth day she was able to go in a "Merlin chair," and with some effort she was able to feebly flex the knee. By the fifth month she was able to slide out of her bed without assistance. Menstruation reappeared in the eighth month. By the sixteenth month she was able to flex the toes, flex and extend the legs; flex, extend, and rotate the thighs, and was able to stand with one hand on a chair. The bowels were under control, except during an attack of diarrhoea. Occasionally there was nocturnal urinary incontinence. Her general health was excellent. The senses of touch, pain, temperature, and position were restored all over. The muscles were moderately rigid. The deep reflexes were marked. There was no reaction of degeneration, and there were no trophic changes in the skin or nails. There were no bedsores.

OPERATIVE INTERFERENCE FOR GASTRORRHAGIA.

The treatment of hæmatemesis due to gastric ulcer is a subject about which much is being written at present, both in England and abroad. In considering the indications for operative interference for gastrorrhagia due to ulcer it must not be forgotten that the source of the bleeding may be either an acute or a chronic ulcer. In a severe attack of bleeding from an acute ulcer, one seldom obtains a history pointing towards gastric trouble of any sort—much less ulcer. Hæmorrhage in cases of acute ulceration, according to Fenwick, is, in 75 per cent. of the cases, the first symptom. The amount of blood vomited is large and truly alarming to the friends, and the general symptoms are such as one would expect from any severe loss of blood. If the bleeding ceases reaction soon supervenes, but thirst and restlessness persist for some time.

Fortunately the hæmorrhage generally ceases quickly and is seldom repeated, or if repeated it is not severe. That the blood is rapidly poured out can be recognised by its bright red appearance and fluidity. As Mr. Moynihan puts it, in a paper read before the Royal Medico-Chirurgical Society on January 27th, 1903, and published in the *Lancet* for January 31st—“The characteristics of hæmorrhage from an acute ulcer are spontaneity, abruptness of onset, rapid loss of a large quantity of blood, marked tendency to spontaneous cessation, and the infrequency of its repetition in anything but insignificant quantity.”

In the case of chronic ulcer, on the other hand, the history antecedent to hæmorrhage is easily obtained to be that of pain after eating, or discomfort and fulness after meals, chronic indigestion and vomiting for months or years. The hæmorrhage varies considerably as regards quantity and frequency.

Mr. Moynihan, in the paper already alluded to, divides these cases into two groups :—

In one the hæmorrhage is trivial in amount, capricious in onset, irregularly repeated, and is merely an unexpected, and, on the whole, an unimportant addition to the usual attacks of vomiting.

In the second group the hæmorrhage is the predominant feature. In a patient who has been subject for years to hæmorrhage there has been a sudden attack of severe bleeding. This attack may or may not be, but in Mr. Moynihan's experience generally is, preceded by a notable accession of pain and gastric irritability for at least two or three days. The hæmorrhage is copious, half a pint at least, and very commonly a pint, being lost. After a quiescent period of twenty-four hours or more a second equally severe attack ensues, to be followed in its turn by a further period of quiet, which, like its predecessor, ends abruptly in a sudden and, on account of the weakness, generally more serious bleeding. In some rare cases the hæmorrhage has ended in a short time fatally from ulceration into a large vessel, such as the splenic artery. This result is, however, fortunately rare. After an attack of hæmorrhage from an acute ulcer, a speedy recovery is usually made: whereas in the case of hæmorrhage from a chronic ulcer, a persisting anæmia is almost constantly observed. “The

characteristics of hæmorrhage from a chronic ulcer, therefore, are (omitting the inconspicuous and immediately fatal cases) the onset after a long history of digestive disturbances culminating in acute discomfort for a few days, the tendency to recurrence with brief intermissions of a few hours or a day or two, the moderate quantity of blood ejected in each outbreak, and the condition of profound anæmia produced by the repeated loss of blood."

We find, then, the greatest differences of opinion expressed in regard to the operative treatment of the cases. For instance, Dieulafoy expressed the opinion that even in a first attack of hæmorrhage an operation should at once be undertaken if so much as half a litre of blood has been lost.

In an able paper on "Non-perforating Gastric Ulcer—Hæmorrhage," in the "Transactions of the American Surgical Association" for 1900, by W. L. Rodman, of Philadelphia, the author endeavoured to establish the indications clearly, but it is only by an attempt to realise the exact pathological conditions which may be present in each of the varieties that one would be most likely to come to a successful solution of the problem.

In the majority of those cases of hæmorrhage from an acute ulcer in which operation has been undertaken the blood has been seen coming from many simple erosions of the mucous membrane—as if the membrane were "weeping" blood. There was no vessel to ligature. Mr. Moynihan says: "Taking into account the characteristic features of the hæmorrhage from acute ulcers, and especially the very marked tendency to spontaneous arrest of the bleeding, it is difficult to be convinced that in these cases of 'weeping' mucous membrane any real benefit has accrued from operation; the surgical interference seems rather to have been in the successful cases a complication in what would otherwise have been an uneventful recovery." This writer's opinion is, that, in acute ulceration, hæmatemesis does not offer much scope for satisfactory treatment by the surgeon. It is, then, mainly in case of hæmorrhage from a chronic ulcer that surgical interference is of such importance. Here one has to deal with an ulcer, mostly with thickened edges, that is easily found. In many reported cases the bleeding point was readily seen. Here the hard, inflammatory, indurated condition of the base of the ulcer

traversed by the vessel, one side of which has become eroded, effectually prevents its contraction, consequently the hæmorrhage can be arrested only by the formation of a clot which plugs the opening for the time, but which may readily become detached or destroyed.

Mr. Moynihan sums up his conclusions on the treatment of hæmorrhage arising from gastric ulcer thus :—

“In hæmorrhage from an acute ulcer medical treatment alone will suffice; surgical measures will very rarely be called for. If any operation has to be done, gastro-enterostomy will probably prove to be most effective. In chronic ulcer operation should be advised as soon as possible. If readily exposed and not adherent to the pancreas or other organ, the ulcer, if solitary, may be excised, but a simple gastro-enterostomy is probably efficient to secure the arrest of the hæmorrhage and the rapid healing of the ulcers.”

Amongst the operative methods which have been used or suggested from time to time in treating gastric hæmorrhage may be mentioned :—

I. Partial gastrectomy; pylorectomy, according to the location of the ulcer.

II. Gastro-enterostomy.

III. Gastrotomy with cauterisation, suture of the ulcer, or ligature *en masse* of the mucous membrane.

IV. Excision of the ulcer alone, with or without ligation of the principal artery—the edges being either subsequently sutured up or utilised for the performance of a gastro-enterostomy, if suitably placed.

Gastro-enterostomy seems to have been as efficient, if, indeed, not more so, than any of the other procedures. In Mr. Moynihan's eight cases the ulcer in one was excised and the edges sutured, but death resulted on the eighth day. In one the ulcer was excised and the edges utilised in the performance of a posterior gastro-enterostomy, while in the remaining six cases gastro-enterostomy alone was performed, and all recovered. It seems strange that the only death resulted after what many would term the ideal operation. That gastro-enterostomy can effectually secure arrest of the hæmorrhage and promote healing of the ulcer seems established from these cases of Moynihan, as well as from the results of others who have had much experience in this branch of surgery.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF STATE MEDICINE.

President—NINIAN M. FALKNER, M.D., F.R.C.P.I.

Sectional Secretary—F. C. MARTLEY, M.D., F.R.C.P.I.

Friday, February 20, 1903.

THE PRESIDENT in the Chair.

President's Address.

In a brief Address the PRESIDENT reviewed the "Nomenclature of Diseases and Causes of Death," from the period of William Cullen, of Edinburgh, up to the year 1901, when Dr. Tatham's modification of the nomenclature of diseases (1896) was adopted for the official reports on Vital Statistics for these countries. In the course of the Address he appealed to the medical profession to consider the importance of giving a well-defined and accurate "cause of death" when framing the certificate, as it was on this testimony, and this testimony alone, that the value of the medical statistics of the nation depended. [The Address will be found in full at page 241.]

After the conclusion of the Address, the following resolution was proposed by Dr. Bewley, seconded by Dr. Parsons, and passed, unanimously:—"That in the opinion of the Section of State Medicine of the Royal Academy of Medicine in Ireland, it is advisable that the department of the Registrar-General of Ireland should be represented on the Nomenclature of Diseases Committee, at present sitting in London."

Soup Impregnated with Copper.

DR. MARTLEY exhibited a specimen of soup made in a tin-lined copper boiler, which, owing to the tin having worn away in places, was largely contaminated with copper. There was a thick black precipitate in which alone the copper was found, the clear fluid above it being quite free from it.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—E. J. MCWEENEY, M.D.

Sectional Secretary—A. H. WHITE, F.R.C.S.I.

Friday, February 27, 1903.

THE PRESIDENT in the Chair.

Cancer of Ovary.

DR. JELLETT showed, with PROFESSOR O'SULLIVAN, a specimen of double adeno-carcinoma of the ovary. He said that the specimen had been removed from a patient, aged about forty. She had been in comparatively good health until December, 1901, when her menstruation ceased and she believed herself to be pregnant. In the following June she noticed a swelling in the left iliac fossa, and at the same time suffered from severe attacks of pain. The tumours were removed in September. At the operation there was no apparent involvement of the pedicle, nor were there noticeable enlarged glands. The subsequent history of the case was difficult to obtain. He saw the patient two months after the operation, and there was then a small, irregular mass in the bottom of Douglas's pouch. This may have been a malignant extension or a fæcal collection, but as the patient refused further treatment it was impossible to definitely determine the point.

PROFESSOR O'SULLIVAN described the solid ovarian tumours as being to the *naked eye* very much alike and about the size of a clenched fist, with surface smooth, uneven, with large projections. The tumours were enclosed in what appeared to be a dense fibrous capsule, but which proved to be the condensed and flattened stroma of the ovary. On section the greater part of the growth was white, resembling ovarian tissue in its markings, but firmer. In one place there was a large blood extravasation. Through the white substance were minute cavities the size of a pin-head and smaller, and occasionally much larger ones—cysts. The largest

of these was filled with a papillary growth and contained a glairy fluid. On examination under the microscope the tumour was found to consist of a stroma resembling the ovarian stroma cells, with spindle and rod-shaped nuclei, and a very small quantity of intercellular substance. The blood vessels which ran in the stroma were well formed and fairly thick-walled; both arteries and veins could be made out. Embedded in this stroma were epithelial structures varying in appearance in different parts. In some places were cysts lined with a high columnar epithelium, ranging in size from a pea down. They contained a granular material with a few swollen cells. These structures were found down to a size when the single layer of epithelium filled up the whole lumen. The largest of these cysts contained papillary growths. Through the rest of the tumour were solid masses of pleomorphic epithelium lying in the stroma and communicating with each other, forming a network of epithelial strands about equal to the stroma in bulk, and traversing it in all directions. The only solid ovarian tumour which bears any resemblance to this of which he had seen an account is a tumour described by von Kahlden (*Centralblatt f. Path.*). In this growth part was composed of small cysts, part of thick columns of cells. These two were separated by a fibrous partition. He distinguishes them as the cancerous changed portions and regards the growth as derived from the follicular epithelium. Here the two forms of growth appear to be intermixed. Both can be seen in the same microscopic field.

THE PRESIDENT said that the case was undoubtedly one of true carcinoma of the ovary. The bilateral character of the affection was typical. The relatively slow development of metastatic infection was likewise often observed in ovarian cancer. He had himself observed three cases, in the last one of which the microscopic appearances were very similar to those seen in this case, save that the adenomatous element was less pronounced. Learning from the writers that recorded cases of ovarian cancer are few in English literature, he proposed to publish the notes of those he had observed.

DR. EARL said he had examined several cases of cancer of the ovary, probably some eight or more. Both ovaries were affected in each case. In two cases the cancer was in an early stage of mucoid degeneration, and in one case at least there were secondary growths in the peritoneum and liver.

DR. JELLETT said that he did not consider ovarian cancer to be

very rare. He had operated on one other case, and had seen at least four in the Rotunda Hospital. As to the question of malignancy, one at least of these ran a most malignant course. Metastases occurred in the retro-peritoneal glands, and ate through the spinal column, death resulting within three months of the operation.

Abnormal Deposit in Joints.

PROFESSOR E. H. BENNETT showed a series of joints marked by the deposit of a white material closely resembling the urate of sodium seen in true gout. [The description will be found at page 161.]

THE PRESIDENT asked what distinction Professor Bennett drew between the condition he now demonstrated and calcification, such as occurs in costal cartilages and many morbid tissues.

DRS. TRAVERS SMITH and KNOTT spoke.

PROFESSOR BENNETT, in reply, pointed out that in this case the calcium carbonate occurred in the form of small crystals.

Sarcoma of the Duodenum.

DR. PARSONS and PROFESSOR O'SULLIVAN exhibited a sarcoma of the duodenum with microscopical sections.

THE PRESIDENT considered it to be in all probability a round-cell sarcoma, but could not explain the hybrid matter referred to by Professor O'Sullivan. He asked how it behaved to the Van Gieson triple stain? He thought the case ought to be submitted to the Committee of Reference.

Fracture of the Astragalus.

PROFESSOR E. H. BENNETT showed a united fracture of the astragalus. The fracture had united without deformity by bone. There was no other fracture either in the bones of the foot or of the leg or thigh. The specimen was found in dissection, and was without history.

Primary Cancer of Liver in a Girl, aged Twenty-one.

DR. W. J. THOMPSON read a case, which will be found at page 272.

PROFESSOR MCWEENEY said the liver is much enlarged; its surface is studded with secondary nodules, some of these umbilicated. The colour is dull red with a greenish tinge. The nodules, viewed from without, are white. On section, the primary mass was

found occupying the centre of the right lobe. It was as large as the closed fist and harder than the secondary knots. On cutting into the specimen a most remarkable change took place in its colour, *most of the secondary knots assuming a brilliant grass-green hue on contact with the air.* This green hue subsequently extended to the liver parenchyma after the specimen had been placed in formalin. Spectroscopic and other tests showed it to be due to oxidised bile-pigment. The cancer was composed of very large epithelial cells closely resembling liver-cells, but differently arranged. Many of them were crammed with globules of green pigment, and here and there presented an attempt at tubular arrangement, the lumen being filled with green matter. It was evident that the cancerous degeneration had not robbed the tumour-cells of their function, and that they had continued to secrete bile, though several generations removed from normal liver cells. The bile-pigment so secreted, finding no outlet, was stored up in the cells, and revealed its presence by the green hue at once assumed on section by the cancer tissue.

The Section then adjourned.

THE SANITARY INSTITUTE.

MR. E. WHITE WALLIS, Secretary, Parkes Museum, Margaret-street, W., informs us that the Twenty-first Congress of the Sanitary Institute will be held at Bradford, Yorkshire, from July 7th to 11th, 1903. The President will be the Right Hon. the Earl of Stamford. Section I.—Sanitary Science and Preventive Medicine—will be presided over by Professor Clifford Allbutt, M.A., M.D., F.R.C.P., D.Sc., F.R.S., J.P., D.L., Regius Professor of Physic in the University of Cambridge. Section II.—Engineering and Architecture—will be presided over by Maurice Fitzmaurice, C.M.G., M. Inst. C.E. Section III.—Physics, Chemistry, and Biology—will be presided over by Professor C. Hunter Stewart, D.Sc., M.B., C.M., F.R.S.E. The lecture to the Congress will be given by J. Slater, B.A., F.R.I.B.A. Eight Technical Conferences will also be held in connection with the Congress, presided over by Councillor W. C. Lupton, Prof. Thomas Oliver, M.A., M.D., F.R.C.P.; J. Spottiswoode Cameron, M.D., B.Sc.; T. H. Yabbicom, M. Inst. C.E.; C. Drabble, M.R.C.V.S.; Mrs. Moser, James Kerr, M.A., M.D., D.P.H.; and Mr. Isaac Young, respectively.

CORK MEDICAL AND SURGICAL SOCIETY.

Wednesday, March 11, 1903.

P. T. O'SULLIVAN, M.D., President, in the Chair.

Alcoholic Cirrhosis of the Liver.

THE PRESIDENT read notes of a case of alcoholic cirrhosis of the liver and ascites in a woman aged forty-five, which had been successfully treated by operation. The patient had been tapped six times, $12\frac{1}{2}$ pints being withdrawn on the last occasion, and the usual remedies having failed to give relief, it was ultimately decided to try operative measures.

DR. ATKINS read notes of the operation, which was that practised by Morrison, of Newcastle-on-Tyne, and consisted in suturing the omentum to the abdominal wall, thus opening a connection between the omental and epigastric veins, and relieving the portal circulation. An incision was made at the junction of the middle and lower thirds of a line drawn from the ensiform cartilage to the umbilicus, and this incision was carried to the right for a distance of four inches. The omentum was then stitched to the abdominal wall throughout the length of the incision, and the abdomen drained through a glass tube, through which a good deal of fluid flowed for some days following the operation, after which it was removed. The patient had been in excellent health since the operation, over three months ago, and there was no return of the ascites. At present the superficial veins over the upper part of the abdomen were greatly distended, showing that the collateral circulation aimed at had been well established.

Recurrent Carcinoma of the Breast.

DR. ATKINS read notes of a case of recurrent carcinoma of the breast, cured by removal of the uterine appendages. Miss C., a single lady, aged forty-three, had had one breast completely removed 14 months previously for carcinoma, and the axillary glands carefully excised. On examination several small hard nodules could be felt under the clavicle and in the axillary fold, and there was considerable œdema of the arm. Both ovaries and Fallopian tubes were then removed. Soon after the operation the nodules began to diminish in size, and became softer, and

finally they all completely disappeared, the œdema of the arm also disappearing. At the same time the patient was put on thyroid extract (5 grains thrice daily), and is still taking it. According to Alban Doran, it is important that the utero-ovarian ligaments should be completely removed, as he says that true ovarian tissue may be sometimes found in these ligaments.

The Diseases of Infancy.

DR. PHILIP G. LEE read a paper on the "Study of Diseases of Infancy." He said that this subject was greatly neglected both by medical students and by the general body of medical men: that it could not be studied properly in general hospitals, and should not be merely an addition in the educational curriculum to the subjects of midwifery and gynæcology, with which it had nothing in common. Most general practitioners were careless and slipshod in their examination of children, owing to the time and trouble involved, and the fact that one had to depend exclusively on one's own powers of observation in making a diagnosis. Medical men attached to children's hospitals frequently came across cases of errors in diagnosis which even an ordinary examination would have rendered impossible, though it should not be forgotten that many diseases ran a different course in children from that taken by them in adults. After referring to the enormous infant mortality in the community, especially in work-houses and other public institutions, he said that a great deal of this was preventable, being due to the want of simple hygienic precautions, and to the apathy both of the profession and the public on the subject. He pleaded for a more systematic study of children's diseases, and greater care in the examination of the little patients.

CEREBRAL SYPHILIS.

A. E. BROWNRIGG (*Boston Medical and Surgical Journal*, Jan. 22, 1903) considers that the main signs which suggest the condition are:—Headache and vertigo; nausea and vomiting; optic neuritis; cranial-nerve palsies or paralyses; apoplectiform attacks or more gradual attacks of somnolence or coma, with partial hemiplegia; irritability and general mental failures; polyuria and polydipsia: marked remittent character to all the symptoms and their changeability.—*The Monthly Cyclopædia of Practical Medicine*, Philadelphia, February, 1903.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR JOHN MOORE, B.A., M.D. Univ. Dubl. ;

F.R.C.P.I. ; F.R. Met. Soc. ;

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VITAL STATISTICS.

For four weeks ending Saturday, February 28, 1903.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending February 28, 1903, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 21·7 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,093,289. The deaths registered in each of the four weeks ended Saturday, February 28, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Feb. 7	Feb. 14	Feb. 21	Feb. 28			Feb. 7	Feb. 14	Feb. 21	Feb. 28	
22 Town Districts	24·3	23·0	21·5	21·7	22·6	Lisburn	9·1	22·7	22·7	13·6	17·0
Armagh	13·7	13·7	20·6	34·4	20·6	Londonderry	31·5	26·5	11·3	11·3	20·2
Ballymena	23·9	19·2	14·4	9·6	16·8	Lurgan	26·6	35·4	22·1	13·3	24·3
Belfast	22·5	20·6	20·8	21·5	21·4	Newry	8·4	37·8	33·6	42·0	30·4
Clonmel	46·2	30·5	35·9	5·1	26·9	Newtownards	34·3	22·9	17·2	5·7	20·0
Cork	24·0	26·0	21·2	25·3	24·1	Portadown	20·7	10·3	5·2	5·2	10·4
Drogheda	28·6	20·4	32·7	4·1	21·5	Queenstown	39·6	26·4	26·4	0·0	23·1
Dublin (Reg. Area)	26·4	25·0	20·7	25·9	24·5	Sligo	24·0	38·4	19·2	4·8	21·6
Dundalk	39·9	19·9	31·9	27·9	29·9	Tralee	5·3	31·7	15·9	15·9	17·2
Galway	19·4	3·9	62·1	3·9	22·3	Waterford	25·3	19·5	25·3	15·6	21·4
Kilkenny	19·7	9·8	14·7	14·7	14·7	Wexford	14·0	4·7	28·0	37·4	21·0
Limerick	17·8	27·3	24·6	20·5	22·6						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, February 28, were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in fourteen of the districts to 16·8 in Newry, the 10 deaths from all causes registered in that district including 4 from measles. Among the 148 deaths from all causes in Belfast are 3 from measles, one from scarlet fever, one from whooping-cough, 2 from diphtheria, 5 from enteric fever, and 2 from diarrhoea. The 37 deaths in Cork from all causes include one from whooping-cough.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this Area is 378,994; that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, February 28, amounted to 203—110 boys and 93 girls; and the deaths to 195—88 males and 107 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 26·8 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the Area, the rate was 25·9 per 1,000. During the eight weeks ending with Saturday, February 28, the death-rate averaged 27·2, and was 3·4 below the mean rate for the corresponding portions of the ten years 1893–1902.

One death from measles was registered. In the preceding week there had been 6 deaths from this disease. There were 3 deaths from scarlet fever; in the 4 previous weeks the deaths from this disease were 3, 3, 3, and 5 respectively. There were 8 deaths from influenza and 5 deaths from whooping-cough. Diphtheria caused one death; in the 4 weeks preceding deaths from diphtheria were one, 3, one, and 3 respectively. There was one death from enteric fever, and 4 deaths were registered as being due to diarrhoeal diseases. There was no death from either small-pox or typhus fever.

The deaths from tuberculous disease (36) comprise 2 deaths from tuberculous phthisis, 23 deaths from *phthisis*, 3 deaths from

tuberculous meningitis, 2 deaths from tuberculous peritonitis, one death from *tabes mesenterica*, and 5⁷ deaths from other forms of the disease.

Two deaths were attributed to carcinoma and 6 deaths to *malignant disease* ("cancer").

(Of 21 deaths assigned to diseases of the nervous system, 8 (all children under one year of age) were from *convulsions*.)

There were 28 deaths from diseases of the heart and blood-vessels.

Diseases of the respiratory system caused 33 deaths, equal to an annual rate of 4.5 per 1,000 of the population, the average rate for the corresponding period of the past 10 years being 8.9 per 1,000. Included in the above total were 25 deaths from bronchitis, one death from broncho-pneumonia, and 4 deaths from *pneumonia*.

Seven deaths from accidental violence were registered.

In 12 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 10 children under one year of age and the death of one person aged 64 years.

Fifty-six of the persons whose deaths were registered during the week were under 5 years of age (31 being infants under one year, of whom 7 were under one month old), and 48 were aged 60 years and upwards, including 21 persons aged 70 and upwards, of whom 2 were octogenarians, and one (a female) was stated to have been aged 93 years.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

Returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and by Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.—

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended February 28, 1903, and during each of the preceding three weeks.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	(German Measles (Rubella))	Scarlet Fever	Typhus Fever	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Other Notifiable Diseases	Total
City of Dublin	Feb. 7	2	31	4	32	-	-	14	-	4	16	11	-	-	1	109
	Feb. 14	4	27	2	48	2	-	15	-	1	29	8	-	-	1	137
	Feb. 21	2	27	-	38	-	-	12	-	4	25	13	-	-	-	121
	Feb. 28	-	23	-	20	1	-	10	-	3	12	11	-	-	-	80
Rathmines and Rathgar Urban District	Feb. 7	-	1	-	4	-	-	1	-	1	-	1	-	-	-	8
	Feb. 14	-	2	-	8	-	-	-	-	-	-	-	-	-	-	5
	Feb. 21	-	8	-	8	-	-	3	-	-	-	-	-	-	-	19
	Feb. 28	-	5	-	4	-	-	1	-	-	-	-	-	-	-	10
Pembroke Urban District	Feb. 7	-	-	-	7	-	-	1	-	-	1	2	-	-	-	11
	Feb. 14	-	-	-	3	-	-	1	-	-	1	5	-	-	-	10
	Feb. 21	-	-	-	4	-	-	-	-	-	1	1	-	1	-	7
	Feb. 28	-	2	-	1	-	-	1	-	-	-	1	-	-	-	6
Blackrock Urban District	Feb. 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Feb. 14	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
	Feb. 21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Feb. 28	-	-	-	1	1	-	-	-	-	-	-	-	-	-	2
Kingstown Urban District	Feb. 7	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
	Feb. 14	-	-	-	2	-	-	-	-	-	1	2	-	-	-	5
	Feb. 21	-	-	-	-	-	-	-	-	-	1	1	-	-	-	2
	Feb. 28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
City of Belfast	Feb. 7	-	-	-	12	-	-	3	-	6	9	14	-	-	-	44
	Feb. 14	-	-	-	7	-	-	3	-	5	7	10	-	-	-	32
	Feb. 21	-	-	-	6	-	-	8	2	7	11	11	1	-	-	46
	Feb. 28	-	-	-	7	-	-	15	4	5	8	7	-	-	-	46

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ending Saturday, February 28, 1903, two cases of small-pox were discharged from hospital, and 9 cases remained under treatment at its close.

Nine cases of measles were admitted to hospital, being 2 over the admissions in the preceding week; 5 were discharged, and 29 cases remained under treatment at the close of the week.

Ten cases of enteric fever were admitted to hospital, 6 cases were discharged, and 62 cases remained under treatment at the close of the week.

Thirty-two cases of scarlatina were admitted to hospital, 37 cases were discharged, there were 4 deaths, and 161 cases remained under treatment at the close of the week. This number is ex-

clusive of 23 patients who were under treatment in the Convalescent Home of Cork-street Hospital at Beneavin, Glasnevin.

Four cases of typhus fever were discharged, and 10 remained under treatment at the close of the week.

Eight cases of diphtheria were admitted to hospital, 7 were discharged, and 35 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 7 cases of pneumonia were admitted to hospital, 4 patients were discharged, and 19 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, February 28, in 76 large English towns, including London (in which the rate was 16·3), was equal to an average annual death-rate of 16·6 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 17·7 per 1,000, the rate for Glasgow being 18·8, and for Edinburgh 17·0.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of February, 1903.

Mean Height of Barometer,	-	-	-	29·951 inches.
Maximal Height of Barometer (13th, at 9 a.m.),				30·527 „
Minimal Height of Barometer (27th, at 3 a.m.),				28·550 „
Mean Dry-bulb Temperature,	-	-	-	46·2°.
Mean Wet-bulb Temperature,	-	-	-	43·6°.
Mean Dew-point Temperature,	-	-	-	40·7°.
Mean Elastic Force (Tension) of Aqueous Vapour,				·258 inch.
Mean Humidity,	-	-	-	81·6 per cent.
Highest Temperature in Shade (on 8th),				59·0°.
Lowest Temperature in Shade (on 28th),				31·7°.
Lowest Temperature on Grass (Radiation) (28th)				27·8°.
Mean Amount of Cloud,	-	-	-	64·0 per cent.
Rainfall (on 15 days),	-	-	-	2·234 inches.
Greatest Daily Rainfall (on 26th),	-	-	-	·644 inch.
General Directions of Wind,	-	-	-	S.W., W.

Remarks.

Unlike its predecessors in 1900, 1901 and 1902, February, 1903, was singularly warm, the mean temperature being 50°

above the average— 47.5° , as against 42.5° . It was 8.2° warmer than February, 1902, and in fact proved a record month in Dublin for warmth. Also, the weather was dry until the 19th—only .203 inch of rain being registered up to that day. But thenceforward rain fell almost daily to the close of the month, and often heavily, .644 inch being recorded in a disastrous cyclone on the night of the 26th–27th. Rough S.W. winds prevailed all through the month, and gales were recorded on as many as 10 days—a persistent area of high atmospheric pressure over France and the Peninsula causing gradients to become very steep in the British Isles in connection with depressions which travelled north-eastwards in rapid succession over the Atlantic, Norwegian Sea and Scandinavia.

But the epoch-making incident of the month was a hurricane on the night of the 26th–27th. The morning of the 26th was clear and cold. At 9 a.m. the barometer stood at 29.497 inches, and was rising in the rear of a deep depression which had passed across the N.W. of Ireland during the previous night. As the day advanced a sheet of cirriform cloud spread across the sky from S.W. and the barometer fell rapidly, the wind backing from W.S.W. to S.S.E. Rain began to fall in heavy showers after 6 p.m. About 8.30 p.m. a fresh gale set in from S. This increased to a whole gale (force 10) or storm (force 11) by 11 p.m. Terrific wind gusts followed, and early on the morning of the 27th a hurricane was raging.

Mr. R. H. Curtis, F.R. Met. Soc., of the Meteorological Office, London, reports as follows on the wind velocity at Kingstown during the gale of February 26–27, 1903. as registered by the Robinson cup-anemometer on the East Pier of the Harbour:—The average hourly velocity during the twelve hours from 8.30 p.m., 26th, to 8.30 a.m., 27th, was $67\frac{1}{2}$ miles per hour (= 50 miles per hour); between 2.50 a.m. and 5.10 a.m., 27th, the average velocity was 87 miles per hour (= 64 miles per hour); between 3.30 a.m. and 4.30 a.m. the velocity was 90 miles (= 66 miles). The highest velocity I can find is 48 miles in the half hour from 4 to 4.30 a.m., equal to a rate of 96 miles per hour (= 70 miles per hour). These are *mean* velocities for the periods named, and do not indicate the force during gusts, which the cup-anemometer at Kingstown is not constructed to record. The first values are “nominal velocities” based on the assumption that the wind travels three times as fast as the cups (“factor 3”). This factor is too high—it should be 2.2—and the actual velocities

are most probably those given in brackets by the side of the others."

By 3 a.m. the barometer had fallen to 28·550 inches. Forest trees went down in hundreds, and havoc was wrought among buildings, roofs, and chimneys. It is estimated that in the Phoenix Park alone the storm uprooted 1,000 large trees, chiefly elms. Lightning flashed at short intervals all through the night, but thunder was not heard, probably owing to the roar of the tempest. No such furious storm had been felt in Dublin since the memorable "big wind" of January 6, 1839.

The duration of bright sunshine was estimated at 63·5 hours, or a daily average of 2·3 hours, compared with 79·25 hours, or a daily average of 2·8 hours in February, 1902.

In Dublin the mean temperature (47·5°) was 5·0° above the average (42·5°), thus establishing a record for warmth. The mean dry-bulb readings at 9 a.m. and 9 p.m. were 46·2°. In the thirty-eight years ending with 1902, February was coldest in 1895 (M. T. = 34·2°), and warmest in 1869 (M. T. = 46·7°). In 1900 the M. T. was 37·9°; in 1901 it was 39·2°; and in 1902, 39·3°.

The mean height of the barometer was 29·951 inches, or 0·096 inch above the average value for February—namely, 29·855 inches. The mercury was as high as 30·527 inches at 9 a.m. of the 13th, and fell to 28·550 inches about 3 a.m. of the 27th. The observed range of atmospheric pressure was, therefore, 1·977 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 46·2°, or 4·8 above the value for January, 1903. Using the formula, *Mean Temp.* = *Min.* + (*Max.* - *Min.* × ·50), the M. T. is 47·5°, compared with a thirty (1871-1900) years' average of 42·5°. On the 8th the thermometer in the screen rose to 59·0°—wind, W.S.W.; on the 28th the temperature fell to 31·7°—wind, calm. The minimum on the grass was 27·8°, also on the 28th.

The rainfall was 2·234 inches, distributed over 15 days. The average rainfall for February in the thirty-five years, 1866-1900, inclusive, was 1·990 inches, and the average number of rainy days was 16. The rainfall, therefore, was above, whereas the rainy days were below, the average. In 1883 the rainfall in February was large—3·752 inches on 17 days; in 1879 also 3·706 inches fell on 23 days. On the other hand, in 1891, only ·042 inch was measured on but 2 days.

The atmosphere was foggy on the 12th only. The amount of

cloud—64·0 per cent.—was below the average—66 per cent. High winds were noted on 16 days, and reached the force of a gale on 10 days, namely—the 6th, 7th, 19th, 20th, 21st, 22nd, 24th, 25th, 26th, and 27th. On the last named days a hurricane prevailed. Hail fell on the 23rd. Snow or sleet fell on the 1st and 23rd. A lunar halo was seen on the 6th. There was a brief thunderstorm with snow and hail on the 23rd, and lightning was seen on the 25th, 26th, and 27th.

The temperature reached or exceeded 50° in the screen on 20 days, and it fell below 32° on only one night, compared with as many as 18 nights in 1895, only one night in 1896, 7 nights in 1898, 4 nights in 1899, 12 nights in 1900, 9 nights in 1901, and 10 nights in 1902. The minima on the grass were 32° or less on 3 nights, compared with every night in 1895, 21 nights in 1900, 17 in 1901, and 11 in 1902. The thermometer never failed to rise to 40° in the screen, and it did not fall below 50° between the 7th and the 12th.

In Dublin the rainfall up to February 28th, 1903, amounted to 5·503 inches on 35 days, compared with 3·872 inches on 29 days in 1901, 5·735 inches on 50 days in 1900, 4·651 inches on 39 days in 1899, only ·714 inch on 16 days in 1891, 3·362 inches on 22 days in 1902, and a thirty-five years' (1866–1900) average of 4·220 inches on 34 days.

The rainfall at Cloneevin, Killiney, Co. Dublin, amounted to 2·08 inches on 14 days, compared with 2·35 inches on 12 days in February, 1902. Only ·13 inch fell during the first 20 days of the month. The average rainfall for February during 18 years, 1885–1902, at this station is 1·787 inches on 13·7 days. The greatest rainfall in 24 hours was ·77 inch on the 26th. Since January 1 the rainfall was 4·90 inches on 35 days, compared with 3·97 inches on 24 days in 1902, 4·39 inches on 28 days in 1901, 7·23 inches on 48 days in 1900, 6·28 inches on 36 days in 1899, 3·32 inches on 29 days in 1898, 4·31 inches on 38 days in 1897, and 1·64 inches on 19 days in 1896.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 15 days to the amount of 2·95 inches, the greatest daily fall being ·78 inch on the 26th. In February, 1901, the rainfall was 1·55 inches on 10 days; in 1902 it was 2·76 inches on 11 days. The temperature in the shade ranged from 33° on the 2nd to 58° on the 8th. The mean temperature in the screen was 47·1° compared with 39·0° in 1902.

At Knockdolian, Greystones, Co. Wicklow, 2·870 inches of rain fell on 14 days. The heaviest fall in 24 hours was ·750 inch on the 26th. In February, 1900, the fall was 6·670 inches on 20 days ; in 1901, 1·385 inches on 11 days ; in 1902, 2·590 inches on 8 days. The total fall to February 28th, 1903, inclusive, was 6·170 inches on 29 days, compared with 4·450 inches on 17 days in 1902, 5·420 inches on 27 days in 1901, 10·436 inches on 44 days in 1900, 8·610 inches on 42 days in 1899, 3·980 inches on 29 days in 1898, 5·190 inches on 37 days in 1897, and only 1·940 inches on but 17 days in 1896.

From Dr. B. H. Steede we learn that the rainfall at the National Hospital for Consumption, Newcastle, Co. Wicklow, was 3·096 inches on 16 days, compared with 5·929 inches on 20 days in February, 1900, 1·296 inches on 11 days in 1901, and 2·923 inches on 10 days in 1902. The maximal fall in 24 hours was ·690 inch on the 26th, but ·620 inch also fell on the 25th. Up to February 28th, the rainfall at Newcastle amounted to 7·416 inches on 35 days, compared with 4·589 inches on 22 days in 1902, and 4·837 inches on 25 days in the corresponding period of 1901. At this Second Order Station the screened thermometers fell to 33° on the 1st and 23rd, and rose to 57·6° on the 8th.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall was 5·890 inches on 22 days, compared with 3·196 inches on 12 days in February, 1902, only 1·748 inches on 11 days in 1901, and 3·786 inches on 17 days in 1900. The maximal fall in 24 hours was ·75 inch on the 26th, and again on the 28th. Hail showers fell on the 22nd, 23rd, and 24th ; snow and rain on the 25th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 47·2°, being 5·1° above the average, and the highest mean for February on a record of 13 previous years (1873–80 and 1898–1902), the next highest was 46·1 for February, 1880. The extremes were—highest, 58·5° on the 8th ; lowest, 31·5° on the 28th. The mean temperature at Portland Bill was 45·5°, and at Dungeness 43·8°. The mean of these two (44·7°) may be taken as the average mean temperature of the principal health resorts on the south coast of England, between Portland and Dungeness, being situate from west to east, Weymouth, Bournemouth, Ventnor I. W., Brighton, Eastbourne, St. Leonard's, &c. The extremes on the south coast of England were—highest, at Dungeness, 54° ; lowest,

also at Dungeness, 28°. The mean daily range of temperature was 9.2° at Kingstown, 9.6° at Dungeness, and 6.1° at Portland. The mean temperature of the sea at Sandycove bathing-place was 45.8°—maximum 47°, minimum 44°. The total rainfall was 1.70 inches at Kingstown on 14 days, 1.72 inches at Portland on 16 days, and 0.77 inch at Dungeness. The duration of bright sunshine was 56.9 hours at Kingstown, 59.3 hours at the Ordnance Survey Office, Phoenix Park, 34.7 at Valentia, 38.0 at Parsonstown, 58.4 hours at Southport, and 66.2 hours at Eastbourne. There was a remarkable absence of easterly wind at Kingstown during the month, as on one day only it was in that quarter (S.S.E.) ; at Portland it was easterly on 4 days, and at Dungeness on 3 days.

THE BLOOD IN LATE SYPHILIS.

G. LÖWENBACH and M. OPPENHEIM (*Deutsches Archiv. für klin. Medicin*, Leipzig) have ascertained that both hæmoglobin and the proportion of iron are materially diminished in the ulcerative and gummatous forms of syphilis. The findings of both ferrometer and hæmatometer agree. The red blood corpuscles range within normal limits.

BEDSORES.

PALMER, in *Merck's Archives*, recommends a method in the treatment of bedsores due to pressure and atrophic changes aggravated by urine undergoing ammoniacal decomposition. A bag of soft linen is made sufficiently large to extend down the thighs and along the patient's spine. This bag is then filled with bran previously moistened with dilute sulphuric acid. Sufficient bran is used to make an easy cushion. By this method the urine which is constantly dribbling from the patient is absorbed by the bran, and the sulphuric acid present neutralises the ammonia. The proportions advised are about two ounces of sulphuric acid to a quart of bran. This should be renewed every second day. It makes the bran only slightly moist.—*The Journal of the American Medical Association*, March 14, 1903.

CORTICAL HEMIANSOPSIA AND SECTOR DEFECTS OF THE VISUAL FIELD. SEVERAL cases of hemianopsia are reported and discussed by Dr. Edward Jackson. Two of them seemed to support the view of Hun, Wilbrand, and Henschen, that the upper lip of the calcarine fissure is connected with the upper part of the retina, having to do with the lower quadrants of the field.—*Medical News*, New York, February 28, 1903.

PERISCOPE.

OPEN-AIR TREATMENT FOR THE POOR.

THE time has now arrived for the provision of facilities for the Open-Air Treatment of Consumption amongst the poor to be regarded as a positive necessity. In Germany there are hundreds of Sanatoria maintained by Insurance Societies, who find it pays them to cure their subscribers, rather than pay the claims which they would have to meet were the disease allowed to run its course. In England there are a few municipal and gratuitous Sanatoria and a few others where the treatment is provided at a nominal fee, but so many are the applicants and so few are the vacancies that patients must wait months for admission, and even then in most cases the stay is so limited as to time that complete cures are possible only in the mildest cases, and many patients who return to their former unhealthy surroundings and dangerous occupations run great risks of relapse. No one is more alive to the needs of the poor than His Majesty the King, who is devoting £200,000 to the erection and maintenance of an Open-Air Sanatorium for the poor, but one such Sanatorium, though a great boon and magnificent example, will not do much towards meeting the demands of our necessitous consumptives. Sanatoria as such are not sufficient in themselves; they should be combined with working colonies, where poor patients could be put in the way of fitting themselves for a useful out-door life after the cure has been effected. An Industrial Sanatorium Farm Colony has just been opened at Ipsden, near Wallingford, by Drs. Charles Reinhardt and Frank Fowler (who conduct the Hailey Sanatorium, near Wallingford, and the Stourfield Park Sanatorium, Bournemouth, for wealthier patients). At the Subscription Sanatorium patients are received at a small charge, and are expected to work at such employment as the Resident Physician may find them physically and otherwise fit for; and amongst other avocations they have the opportunity of learning pheasant-farming, poultry-rearing, gardening, and various agricultural operations, in order to gain experience in such outdoor occupations as may be useful to them after they leave the Sanatorium.

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OF

MEDICAL SCIENCE.

MAY 1, 1903.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XVII.—*The Operative Treatment of Enlarged Prostate.**

By SIR WILLIAM THOMSON, C.B.; Surgeon to the Richmond Hospital, Dublin; Hon. Surgeon to H. M. the King.

REMOVAL of the prostate, or of portions of it, because of obstruction to urination, is a procedure which, in this country at all events, has the attractiveness of novelty. I think I may say that there are few in Dublin who have seen the operation performed, and perhaps still fewer who have themselves done it. Prostatic obstruction, with all its attendant miseries and its tendency to cause the death of the patient, has until recently been viewed as a condition impossible to cure, and the surgeon's ingenuity has been directed to palliating the victim's distress by the use of the catheter and the administration of soothing drugs.

We have almost vainly hoped for a method comparatively safe and rapid of removing for good and all the body which produced the trouble. In the efforts to attain this the late Mr. M'Gill, of Leeds, and Belfield, of Chicago, stand prominent, and others have occasionally followed their example. But somehow to the majority of surgeons the radical operative methods have not commended themselves, and in the fourteen years which have elapsed since M'Gill's reports there certainly has been

* Read before the Section of Surgery of the Royal Academy of Medicine in Ireland, on Friday, March 6, 1903.

no general adoption of prostatectomy. If to-day British and Irish surgeons stand in the position that the principle of operative interference is accepted and practised on some approved line, I think I am right in claiming for Mr. P. J. Freyer, of London, that it is due to his strong advocacy and to the remarkably successful results which he has achieved.

I do not intend to discuss the cauterising or cutting operations upon the prostate through the urethra, by the methods of Bottini or Norton, in which the object is to remove only such portions of the gland as cause obstruction to the flow of urine. I wish to refer rather to those operations which aim at removal of the whole gland, or of adenomatous masses, which, for practical purposes, may be regarded as the gland. These may be divided into two great classes—the suprapubic and the perineal; and a sub-class may be added in which the two procedures are combined.

Suprapubic cystotomy for the removal of tumours of the wall or of stone, appears to have suggested to M'Gill, of Leeds, that a like course might be successfully pursued in regard to the prostate. His first operation was done in March, 1887, and this, with three others, was reported to the Clinical Society of London in November of the same year. His example was followed by his colleagues, and two years later he reported the results at the meeting of the British Medical Association. Twenty-four operations had been done, and the number was made up as follows:—M'Gill, 12; Atkinson, 5; Mayo Robson, 3; Jessop, 3; Pridgin Teale, 1. Of these four died, and of the remaining twenty, seven no longer required the use of a catheter and were able to expel urine normally. You will notice, therefore, that only about one-third of the surviving patients were restored to freedom of urination.

But in comparing these results with what we expect to-day, it is important to note particularly the nature of M'Gill's early operations. He says: "The growth has been removed partly by tearing with forceps and partly by a strong cutting instrument which I have devised for the purpose. This is a tedious and not very elegant proceeding; it will, if the operation prove a useful one, probably be improved. The piecemeal removal which I have practised has, however, been thus far satisfactory" ("Clin. Soc. Trans.," 1888, p. 52).

Now when we look into the details of the reported cases (*British Med. Jour.*, Oct. 19, 1889, p. 864) we find that in most instances only a partial removal was effected, and that the patient had still to run the risk of a continued growth of the parts left behind. Thus we have these descriptions of the parts removed :—(Case 2) Middle lobe, size of a bean ; (3) collar enlargement, size of a walnut ; (8) middle lobe, size of a filbert ; (12) piece the size of a small pea ; (16) middle lobe, size of a filbert. Atkinson snipped off a middle lobe with a scissors, and enucleated the lateral lobes with the finger. In the 18th case M'Gill "enucleated a portion" of the prostate ; and in the 20th, having removed the middle lobe with the forceps, enucleated the lateral lobes. These cases, therefore, were in the main partial removals by means of scissors and forceps, and the enucleation was apparently an unexpected incident arising during the operation. The fact that adenomata of the prostate could be so removed was already known. Harrison had reported such a result in the course of a perineal operation for stone. In 1878 Bickersteth, of Liverpool, in performing lateral lithotomy had shelled out an adenoma the size of a hen's egg. In 1870 Sir William Fergusson "narrated a case where, in a patient eighty years of age, after removing the stone by lithotomy, he extracted the lower part of the prostate with the finger as readily as if it had been a stone" (Harrison on "Surgical Disorders of the Urinary Organs," p. 343, 3rd Edition). Other like cases are on record.

The possibility of enucleation, then, had been known for many years, and two years after his first case M'Gill, with larger experience, laid down the principle that "the prostate should be removed as far as possible by enucleation with the fingers, and not by cutting." Nevertheless this fact and the promising successes of M'Gill and his colleagues appear to have made hardly any impression upon the surgical mind in these countries. Only here and there did their suggestions produce any effect ; there was no general acceptance, and the position may be taken as accurately described by Buckston Brown, who so lately as last year (*Brit. Med. Jour.*, March 29, 1902, p. 763) declared : "The fact is that prostatectomy has been abandoned by the

majority of surgeons as too dangerous an operation to be undertaken save under very exceptional circumstances." It was only a year ago that Freyer's reported cases and the heated controversy which they excited awoke the profession generally to the powers within our reach in this branch of surgery. The American surgeons—notably Belfield and Fuller—were not, however, unimpressed by English experiences, and in that country the operation has reached a stage of marked development.

The operation which I have carried out is that advocated by Freyer, and it is to him I owe it that I have had some success in dealing with enlargement of the prostate. The method is thorough, and it requires no instrument for the ultimate steps. The bladder is opened in the suprapubic region, having first been thoroughly washed out, and dis tended with boric lotion. A catheter is allowed to remain in as a guide to identify the urethra. The prostate having been reached, the mucous membrane is snipped or scraped through. Then two fingers of one hand are passed into the rectum to raise and fix the prostate, and the forefinger of the other is used to shell out the structure either in two or more well-defined pieces or in a single mass. This is sometimes a very laborious task, but with patience the whole obstruction can be satisfactorily removed. Bleeding is generally controlled by free douching with hot boric lotion. A large drainage tube is allowed to remain in for 48 hours, and the bladder is daily washed out. The wound is usually closed in about four or five weeks.

The operation by the perineal route consisted at first in making an incision into the urethra, and then dealing with such obstructing portions as could be removed by means of forceps or scissors. But it has now developed into an enucleation, and is much practised by American surgeons. Thus, A. B. Johnson, New York, makes a curved incision in front of the anus, and exposes the prostate by dissection. "After incision of the capsule upon either side in the direction of the fibres of the levator ani, the two halves of the gland were enucleated with the forefinger." ("Annals of Surgery," vol. 24, p. 426.) The urethra is not opened. Samuel Alexander, of New York, says: "The true breadth of the

PLATE I.



FIG. 1.

CASE I.—Lateral Lobes removed separately. Photograph shows them somewhat smaller than the natural size.

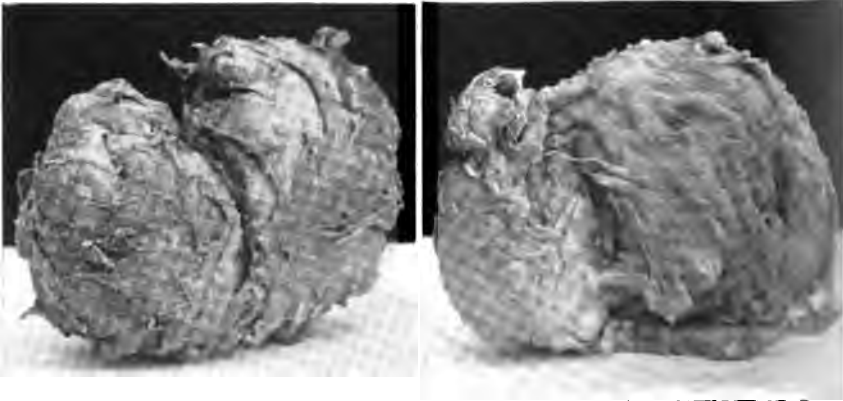


FIG. 2.

CASE II.—Right and Left Lobes of Prostate.

prostate is broken into by the finger just beneath the mucous membrane of the prostatic urethra, and the incised prostate is shelled out from within its sheath by digital dissection." ("Annals of Surgery," vol. 23, p. 334.) Nicholl and others in this country prefer the perineal operation.

The combined perineal and suprapubic operation is represented by Belfield in America. He believes that the low-level drainage thus secured avoids dangers which may attend the high operation. I have no doubt that in certain cases this combined method is admirable. It will always be of special advantage when the urine is putrid, because it enables us to secure safe tube drainage until the wounds are secure against absorption. But I am not yet prepared to adopt it as a routine method, however excellent it may be in special cases.

For reasons which I shall state later on I have selected the suprapubic operation, and the cases in which I have practised it are as follow :—

CASE I.—The patient was a gentleman, aged sixty-six, who for nearly fifteen years had suffered from frequent micturition, and who consulted me first about five years ago. Since that time he had been obliged to use the catheter two or three times a day, and on the occasions when he tried to empty the bladder without it the effort was prolonged and painful. The residual urine was from 3 to 4 ounces. The prostate could be distinctly defined by the finger, the left lobe being the larger. He frequently inquired if an operation could relieve him, but I pointed out that while he could use the catheter I should not recommend one. Later on unilateral vasectomy was performed in London without benefit. Meanwhile the difficulty of catheterisation increased. Quite recently he had a sharp attack of cystitis, and his general condition became so serious that I advised him to submit to removal of the obstruction by direct operation. He readily assented, being almost worn out mentally and physically. Assisted by Sir Thornley Stoker, Mr. Harvey, and Dr. Coleman, I opened the bladder above the pubes on February 15th. Two smooth lateral lobes were found projecting well into the cavity, with the catheter lying between. There was no middle lobe. The mass was lifted well up by two fingers of the left hand in the rectum, and the covering mucous membrane on the left side was divided so as to admit the finger tip. Keeping the nail close upon the mass it

was slowly separated from its outer covering and the urethra, and extracted. This took about twenty-five minutes. The right lobe was removed in the same way in ten minutes. Each mass came out unbroken, and enclosed in a thin, white fibrous capsule. The bleeding on the left side was sharp, but was controlled by sponge pressure and hot boric lotion. Then a large drainage tube was placed in the bladder. No sutures or ligatures were used even in the external wound. The temperature rose to 100° on the second day; afterwards it remained normal. On the twenty-seventh day 7 ounces of urine were passed per urethram. He left bed in four weeks. He can now hold urine for five hours in the daytime and all night, and he passes it in a normal stream, with full force. He describes himself as a new man.

Dr. H. C. Earl has furnished a report on the specimens, as follows:—

“Microscopically the two tumours show a very similar structure. The glands are large and numerous, some being dilated into small cysts. There is no doubt that a hyperplasia of the glands has occurred. The tissue in which the glands lie is chiefly smooth muscle, with only a very small admixture of fibrous connective tissue. The dimensions are: Right, length $1\frac{3}{4}$ in., width $1\frac{1}{4}$ in., circumference 3 in.; Left, length $2\frac{1}{4}$ in., width $1\frac{1}{4}$ in., circumference $3\frac{1}{4}$ in. Total weight about 7 drachms.”

Last month this gentleman wrote to me:—“A year ago to-day I was in your hands for operation, which you performed so successfully, and I feel that I must send you something for the Hospital (your Ward, if possible) by way of a thankoffering for all you did for me. . . . I am thankful to say that I have no trouble at all with the waterworks part of my mechanism, and you can appreciate what a relief that is.”

CASE II.—A gentleman, aged seventy-five. He had been using a catheter for some years, but latterly it always produced bleeding, and sometimes he quite failed to pass the instrument. The residual urine varied from 4 to 6 ounces. There were a few granular tube casts, and a small quantity of albumen was present. Urea 7 grains to the ounce. The prostate was easily outlined in the rectum. I put before the patient, who was a medical man, all the circumstances of his case, but he said his life was miserable. At times he had from 20 to 26 calls to urinate during the night.

I accordingly operated on the 28th Sept., 1902. The lateral lobes were enucleated as before. There was no middle lobe. All went well until 48 hours later, when he had a slight cough, and râles were found present. Dr. Coleman saw him with me at once, but in spite of all our efforts the bronchial condition became worse, and he died on the fifth day. Throughout there was no trouble with the operation wound, and urine flowed freely from it. I have no doubt that the fatality was due to the irritation of the air passages set up originally by the ether, although the amount administered was small. In this case the weight of the tumour was 600 grains.

CASE III.—J. T., aged sixty-two, was admitted to the Richmond Hospital on Oct. 2. He had an enlarged prostate. He complained of great frequency of micturition day and night, sometimes as often as twice in an hour. His condition was such that he could not work. Residual urine 4 ounces; it was alkaline, and contained pus and blood cells, much epithelium, and some granular casts. He was suffering from some cystitis, and this having been allayed I operated on the 13th of October. The left lobe was removed, but an examination of the right showed it to be of normal size, and I determined not to interfere with it. The patient passed water per urethram on the 8th of November. There was a good deal of calculous deposit, which delayed the healing of the wound, and on the subsequent closure of the fistula he passed a quantity of small fragments. He is now quite free from all trouble. He sleeps for six hours undisturbed, and can pass water in a full stream.

CASE IV.—W. H., aged sixty-three; admitted to Richmond Hospital Oct. 9, 1902. For three years he has had to pass water about 14 times a day. He has been using a catheter for some time; and he was admitted for complete retention, which the medical men who saw him in the country could not relieve. Mr. Moore, the House Surgeon, succeeded in passing a catheter on his arrival. He had a bad attack of cystitis, which was treated. The residual urine was 6 ounces; it was alkaline, and contained some albumen and a very few granular casts. The arteries were very rigid. I operated on him on Nov. 10, 1902. The whole mass of the prostate came away in one piece, including the prostatic urethra, the enucleation lasting about ten minutes. There was not much hæmorrhage at the time, but it was reported at four

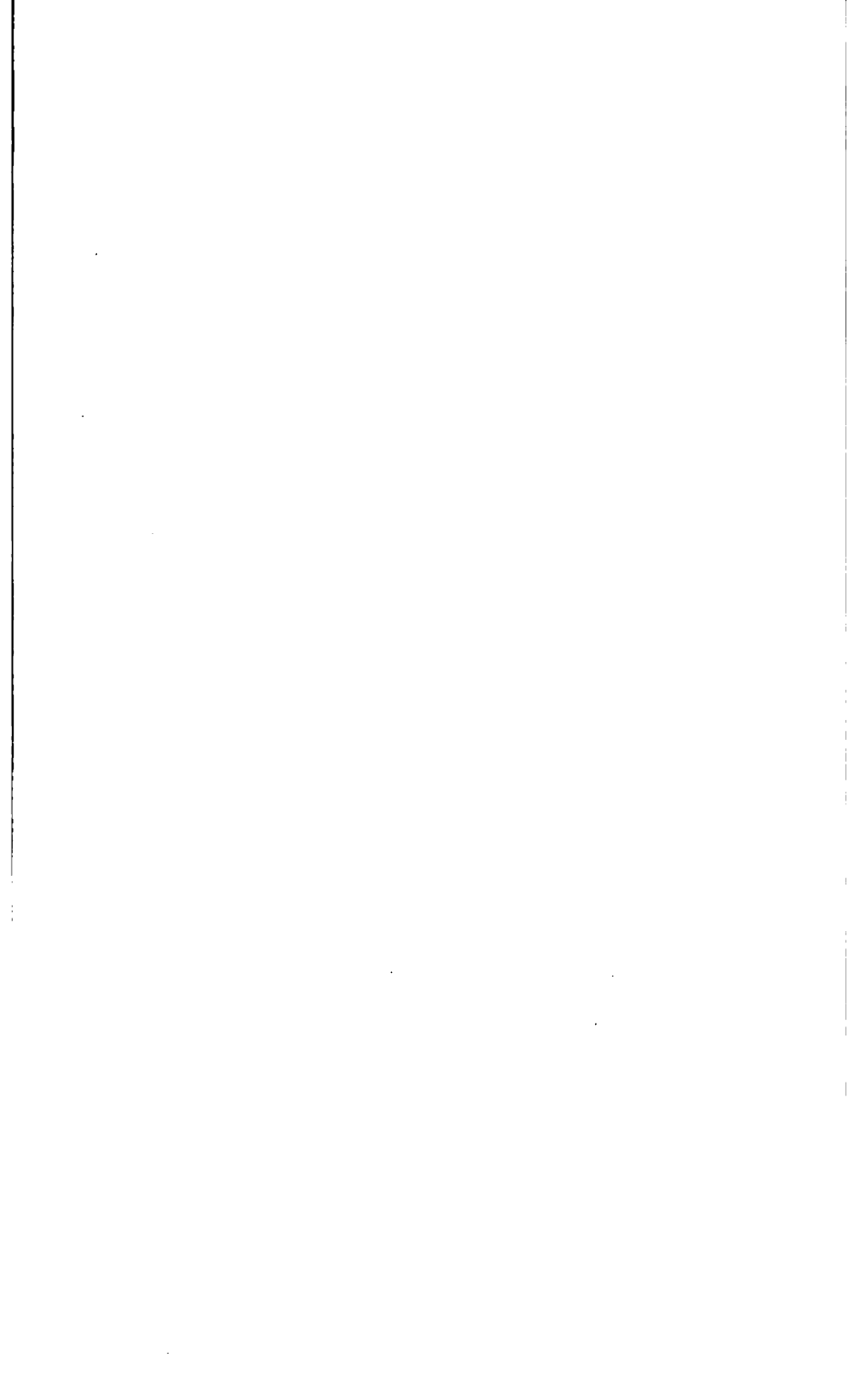
o'clock that there was smart bleeding. Mr. Harvey used the hot douch with some effect, but at seven the bleeding recurred. Adrenalin was then injected without avail, and I saw the patient with Mr. Harvey a little after eight. We then decided to use a compress on the prostatic site. For this purpose the patient was anaesthetised. A large plug, tied in the centre with a long silk ligature, was introduced. The ligature was attached to a catheter which had been passed, and was then withdrawn, carrying with it the silk. By traction upon this I found that the bleeding was at once stopped, and an assistant remained with the patient for this purpose. After thirty-six hours the plug was removed. Although the patient never had a temperature above 100°, the healing of the wound was delayed by the disturbance and by the calculous deposits upon the edges. He has returned home, and has no pain and no difficulty in passing water. He complained at first of some frequency, but this soon abated. The tumour weighed 932 grains, or over two ounces. (Plate II.)

CASE V.—A gentleman, aged fifty-three. For some years he has had to rise two or three times at night to pass water. About two years ago he found he had to do this in the daytime about every hour. The residual urine was about 4 ounces. It became necessary to use a rubber catheter; without it he could pass only a few drops after much straining. Sometimes he has had to rise every quarter of an hour at night. The straining often caused an evacuation of the bowel. Difficulty in passing the catheter followed; and at the time I saw him with Dr. M'William, in December, he was using a No. 5 Coudé catheter. He had several attacks of cystitis, and was subject to frequent rigors. He accepted the recommendation of operation, and accordingly on the 13th of January last I removed the tumour, assisted by Sir Thornley Stoker, and in presence of Dr. M'William, Dr. Dobbin, and Dr. Keegan. Dr. Coleman gave the anaesthetic. Unlike the other cases the lobes were irregular in outline, this being produced by adenomatous masses of varying size. They were enucleated to the number of five, three of them being of the size of walnuts. The case was the most difficult I have had, and took a considerable time; but I am glad to report that the patient never had a bad symptom, and has returned home. The case is interesting in regard to the comparative youth of the patient.

PLATE II.



Prostate, including Urethra, removed *en masse*. Catheter is passed through Urethra.



Of course the advocates of each method have fault to find with all others. Thus it is objected that the suprapubic operation is dangerous, that drainage is unsatisfactory, that extravasation of urine and sepsis are likely to take place, and that the recovery is tedious. For myself I can say that in a large number of cystotomies which I have done I have seen sepsis only once, that I have had only one death resulting from operation, and that extravasation of urine has never taken place. The recovery is tedious, but rarely exceeds five weeks.

The objections to the perineal route seem to me to be more weighty. Those who have explored the bladder through the lower central incision have probably experienced how difficult it is to reach the upper limit of a moderately enlarged prostate. Watson, of Boston, himself an advocate of this procedure, points out that an essential possession for the surgeon who adopts this method is a forefinger with a working length of three inches or more. Well, first you must have the finger: but, having it, what is the result?—that only two-thirds of the cases could be dealt with through the perineum. As M'Gill judiciously declared: "It is unwise to commence an operation with the probability of failing in 30 per cent. of the cases." Of course the answer will be that the surgeon in such a case could then do a suprapubic section; but, on general grounds, it is undesirable to change a method midway, and certainly better to select a plan which we can follow out to a definite conclusion. Efforts to lessen the difficulty of reaching the distant parts of the prostate by the finger through the perineal urethra have naturally been made. One is to draw it down by fingers in the rectum; another to make a small suprapubic wound, and through it push the prostate towards the perineum; and Fry passes a hollow ball into the bladder through the perineal wound, distends it with water so as to make a bulk sufficient to "hitch" against the upper vesical portion of the prostate, and then pulls it down by means of the flexible tube through which the water is passed into the ball. It looks an attractive contrivance, but I know a case in which the tube broke off on traction, and the ball was left useless in the bladder. It further seems to me that there is danger in perforating the vesical mucous membrane during the removal of the prostate through the

perineum. That structure is thin, and the finger nail can easily penetrate it. The result would be an opening through which urine would infiltrate the structures at the outlet of the pelvis, in spite of the draining by catheter through the urethral incision.

But, outside all these possible difficulties with the prostate itself, there can be no doubt that we cannot through the perineum make a complete exploration of the bladder with the finger, and that it is quite possible, as I know, to miss an encysted, or even a loose, calculus. I have seen one case which was under treatment for enlarged prostate for some years, without there being a suspicion of stone, and yet the bladder really contained over 80 calculi—many as large as marbles. There the suprapubic route for the combined operations of prostatectomy and lithotomy offered immense advantages over the perineal.

But while I am of opinion that the method which I have followed is preferable to others, I think there are cases in which operation through the perineum may be more easy. For instance, in a man with a large pendulous abdomen, the suprapubic wound is many inches deep, and unless the fat is very freely divided so that the hand can get down into proximity to the bladder, the finger will carry out the work of enucleation with great difficulty; there is, perhaps, more danger of infection, and the wound is slow to heal. Small prostates may be more easily removed through the perineum; but that route is certainly unfitted for the enucleation of some of the large masses with which we meet. The finger in such cases has to be supplemented by instruments, and the tumour instead of coming away in a well-defined mass is broken up into several pieces.

There are a few points to which I wish to call your attention as the result of my own observations:—

1. So far as I have seen, the lateral lobes are most frequently the cause of obstruction. I have not myself seen a true pedunculated mass producing a block at the internal orifice, although we have been in the habit of laying stress upon this as the most usual cause of the urinary distress.

2. The bulk of the prostate as felt in the rectum gives us no indication as to its intravesical contour. It may present two

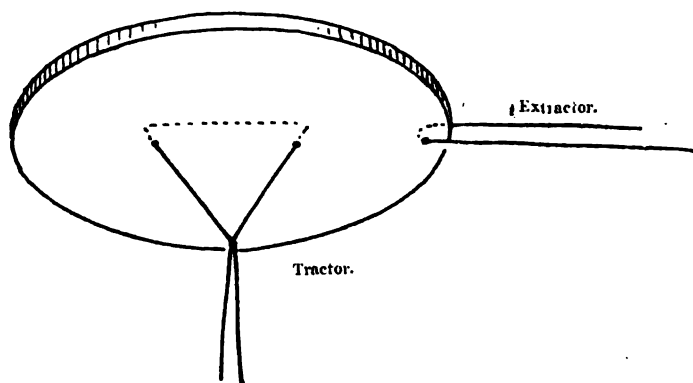
smooth lateral masses in the bladder, with the urethral opening forming a dimple between, or it may have a somewhat undulating surface, due to the projection of adenomatous tumours in the substance of the gland itself. No extravescical examination will determine the difference, although in cases where the prostate is very large its general outline may be determined by a bimanual examination—two fingers of the left hand being in the rectum, and the right fingers over the bladder.

3. The size of the prostate has no necessary relation to the severity of the urinary distress. In the case in which I removed only one lobe, which was small, the patient had had repeated attacks of retention and cystitis. His calls at night were often as many as twenty, and he was quite unfitted for work. Yet the tumour is of inconsiderable size compared with the remainder of those I show you.

4. The smaller the tumour the more difficult relatively is its enucleation. Mr. Freyer has also observed this fact, and he accounts for it by the suggestion that the large tumour shakes itself free, as it were, from its natural attachments. The prostate which I exhibit, which was removed with its urethra, took only ten minutes to enucleate. The single lobe took twenty-five minutes of hard work. I think the removal of the larger tumours is more facile because they are more bulky, looser in their attachments, and therefore more easily dealt with by the forefinger when they are pressed upwards from the rectum. The smaller ones are not so stable; they are apt to move much during the enucleating process. Added to all this there is no doubt that the attachments of the mucous membrane are more intimate, and require a good deal of cautious force to free them.

Although hæmorrhage is usually easily controlled by flushing with hot boric solution, it may be severe, owing to opening of a vein in the prostatic plexus. Bleeding has sometimes caused death, and in one of my cases I found it necessary to introduce the compress which I have described. The objection to the plugging of the bladder is that we have afterwards to remove a bulky mass, and so disturb the union which has begun. There is then risk in opening channels for inspection or extravasation. I have devised a method of dealing with the complication which, I think, will be found

effective and simple. A piece of smooth red rubber, one-sixth of an inch thick, is cut in oval shape, two inches by one and a half. A long, strong silk ligature is passed through the rubber at a point midway in its smaller diameter, and two-thirds of an inch from the edge of the larger diameter. The



needle should pass in obliquely from without. The other end of the silk is introduced in the same way half an inch from the opposite edge, and the two portions are tied together in a knot, close to the under surface of the rubber. The ends are then secured to a catheter, which has been introduced through the urethra, and the instrument is withdrawn. Pulling on the ligatures which have so been carried out through the urethra, the flexible rubber oval fits easily over the site of the prostate, and moderate traction will control the bleeding. This can be effected by attaching the traction silk to a piece of strong elastic, which is in turn secured to a turn of bandage round the lower part of the patient's thigh. The tendency to hæmorrhage, however, is not likely to continue long. In order to remove the rubber a silk ligature is passed through one end, about a quarter of an inch from the edge. Traction upon this pulls out the little plaque edgeways, and practically no disturbance of parts results. The objection to the cotton pad

suggested by Keyes is that it is complicated and cumbrous, and that adhesions occur which make the removal most painful and demand an anæsthetic. The rubber is clean, small, non-adherent, and it can be removed without difficulty.

In a discussion upon this subject in this Section last year several members declared that enucleation of the prostate, as a whole, was an anatomical impossibility. I have, in another paper (*Brit. Med. Journal*, May 31, 1902), stated the views of many surgeons upon this point. I think there can no longer be any doubt that while we often remove only adenomata, leaving behind a thin layer of the original gland, expanded and squeezed into a thin layer, we can, and do, at other times take away the whole prostate. I show you the enlarged prostate removed in one piece, and enclosing in its mass the prostatic urethra. Strange as it may seem, the patient has not suffered from the mutilation, and the same result has been observed by Freyer and other operators who have had a like experience.

The after management of these cases needs the utmost care, but the surprisingly good results which follow are worth all the time and trouble which the surgeon devotes to them.

ART. XVIII.—*The Diagnosis of Perforated Gastric Ulcer.**

By R. CHARLES B. MAUNSELL, M.B., B.Ch. (Univ. Dubl.); F.R.C.S.I.; Surgeon to Mercer's Hospital, Dublin; University Examiner in Surgery, Trin. Coll. Dubl.

THE importance of prompt treatment, and, therefore, of early diagnosis, of perforative peritonitis is sufficient excuse for occupying a brief period of your valuable time, even if most of that which I have to say has been already said, perhaps more than once. Reiteration is often necessary to draw attention to opinions, more especially if these opinions run counter to those previously accepted.

In March, 1901, I had the honour of making a communication before the Surgical Section of this Academy, entitled "Some Practical Points in the Diagnosis and Operative Treatment of Perforated Gastric Ulcer," giving full details of

* Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, January 30, 1903.

four cases of my own, and generalisations from the cases of several other operators; but, although the subject of diagnosis formed a fair portion of the communication, the subsequent discussion was almost entirely limited to details in operative technique, so I determined to change the venue in the hope of learning something of the equally important details of diagnosis, both prior to opening the abdomen and also after this has been accomplished. At the same time, a short note of a complicated and successful case, which has quite recently been under my care, will serve as a text for some of the remarks.

From what one reads and hears it is evident that there are still a few physicians who look upon a surgeon as a kind of mechanic, and to these physicians two thoughts will arise: Firstly, why a surgeon should trouble about diagnosis; secondly, what right has a surgeon to think he has made a diagnosis, considering that most of these cases are seen primarily by a physician, and, as it were, labelled before the surgeon sees them? The answer to these silent queries is, that any man who operates upon a patient without carefully making his own examination and diagnosis is not only unworthy the name of surgeon, but is a distinct danger to the community. Up to the present I have operated upon five cases, three of which were primarily diagnosticated by my colleague Dr. Lumsden, and one by my friend Dr. Copley; in all five an absolute diagnosis was stated before operation, although I would not state more than perforative peritonitis in the first case. By strictly adhering to this rule of double diagnosis, it ought to be possible to reduce considerably unnecessary or ill-planned operations.

For the purposes of diagnosis and treatment it is necessary to divide cases of gastric perforation into three main classes—viz., acute, sub-acute, and chronic—as given by Messrs. Mayo Robson and Moynihan in their really marvellous record of gastric surgery entitled “Diseases of the Stomach and their Surgical Treatment,” published in 1901; and a sub-class, to which attention was drawn in my previous communication, of which cases Nos. I. and III. were examples—viz., *cases of double onset*.

Chronic perforations are these in which protective adhesions have formed before actual perforation, and the symptoms

are either evanescent or followed by subphrenic abscess, &c. Sub-acute perforations are these in which the stomach is usually empty, the perforation small, and the limited peritonitis may either subside, leaving adhesions, or may form an abscess, or more or less slowly spread until it merges into general peritonitis.

Acute perforations are these in which none of the favourable circumstances are present, and extravasation is general from the start, and absolutely fatal unless promptly treated by operation. Double onset perforations are these in which a collection of virulent fluid or an abscess following one of the two first varieties is localised, at first in such positions as the lesser sac of peritoneum, or in the upper abdomen above the transverse colon, and secondarily bursts, causing acute general infection.

It would be quite out of the question to deal with the chronic and most of the sub-acute cases at present as they open up the vast subjects of subphrenic abscess and other interesting conditions, so we will confine our attention to the more acute varieties.

My own rather limited experience, combined with a fairly careful perusal of current journalistic Medicine and Surgery, leads me to the following tentative opinions :—

With regard to sex and age, young women between the ages of twenty and thirty are the most frequent subjects of perforation ; male cases are usually rather older, and are by no means infrequent. A good practical thing to remember is, that whether a patient is male or female, young or old, perforation may be present.

The previous history of gastric ulceration may be obtained, but very frequently only dyspeptic or gastralgic symptoms are mentioned, and in a few cases even these are absent. This is not to be wondered at, considering that it is usually the rapidly forming "punched out" ulcer which leads to acute perforation. The onset of symptoms is always sudden, usually very severe, and frequently takes place during some exertion. The pain is intense, stabbing in character, or the patient feels that something has given way, and may have the sensation of trickling hot fluid ; it is referred to the epigastrium, may shoot round the left hypochondrium, or

out below the left scapula, or may be felt above the clavicles : after a while it may be referred also to the right or left iliac fossa, and later may become general over the abdomen. The pain does not leave one place and shift to another, as in reflex pains, but the starting point in the epigastrium remains painful and tender ; in double onset cases iliac pain may be the first complaint in the second onset, and is likely to be mistaken for appendicitis. The pain usually doubles the patient up at first, but soon abates to a varying degree.

Collapse is a very variable symptom, some cases dying rapidly before efficient treatment can be adopted, whilst others are able to walk to hospital in a very short while after the accident, as in my fourth case ; in my third case shock was fairly marked, and in the fifth the patient became unconscious for some minutes, and was very weak for several hours. Shock tends to become less during the five or six hours following perforation.

Vomiting is common just before the onset, but usually ceases or becomes infrequent subsequently until peritonitis becomes established, when vomiting returns, becomes yellow and then black, accompanied in many cases by distressing hiccough. This black vomit, &c., is seen only in neglected cases, which by this time are practically beyond all aid. Hæmatemesis and melæna are very rare. The urine is usually passed freely and is of high sp. gr. ; the bowels are usually constipated, and enemata are liable to be retained owing to intestinal paresis, but in some cases there may be diarrhœa.

During or just after the period of shock the patient may crave for a drink, but subsequently thirst is not by any means a prominent symptom.

Upon examination we notice a rather dusky, anxious, drawn face, and an anxious, restless manner, but the patient does not toss about as in hæmorrhage ; decubitus is usually dorsal, with the knees and hips slightly flexed, and the head and shoulders slightly raised ; the respirations are shallow, rather increased in frequency and thoracic in type ; the tongue is slightly furred, but is moist ; the temperature is normal or subnormal, unless in late cases, and the pulse anything from 60 to 110, tending to increase by about five beats for each hour after the first five or six after the onset ; it is in most cases

regular and of good volume. The frequent, wiry pulse, so commonly described, means a late case with general peritonitis. The abdomen is flat in males or nulliparous females, distended in those who have borne children or have flabby abdominal muscles.

On palpation the apex beat of the heart is displaced upwards, especially in the cases with flat abdomens; the abdominal muscles are rigid, and pain is complained of on pressure over the upper abdomen. If respiration is stopped pressure can be tolerated, but as soon as respiration starts again pain is intense, and friction may be felt in a few cases.

Upon percussion tympany is practically uniform, except over the stomach, which in most cases retains its own peculiar note as, to quote from my previous paper, "a perforated and a collapsed stomach are by no means synonymous terms." Dulness may be present in the flanks, but it is only a fairly late sign; the abdominal tympany encroaches upon the thoracic area, and the liver dulness is generally greatly diminished or abolished, due, I believe, to paralytic distension of the intestines pushing up and rotating the liver, and not often, as is stated, to free gas separating that viscus from the abdominal wall.

Having got so far, some one may say we have only diagnosticated an acute "peritoneal catastrophe," and may ask for the differential diagnosis. The number of lesions which require to be differentiated in any given case depends so much upon the ability of the diagnostician that this would be a hopeless task, unless we take for granted that we recognise the case as one of perforative peritonitis, and then try to find out what has perforated.

There are two non-perforative diseases, however, which cause much difficulty, even to the most skilled; these are diaphragmatic pleurisy and acute pancreatitis.

With regard to the perforative lesions, we may roughly divide them into causes in the upper and causes in the lower abdomen, using the transverse colon as our line of division, and merely point out in general terms the lines which might be followed to reduce the diagnosis to one or a few lesions. The common causes in the lower abdomen are tubal or ovarian

abscess, perforation or gangrene of the appendix, and ulceration or sloughing of the intestines. These, in addition to their own special features and history, have some points in common which distinctly point to the lower abdomen—viz. the pain and rigidity are in the lower abdomen or referred to the umbilicus, and there may be early and increasing pain and difficulty in micturition owing to involvement of the peritoneal surface of bladder, and there is very frequently pain referred to the external genito-urinary organs. This is frequently a most remarkable and very early sign of perforation in typhoid fever. In the upper abdomen, the common things are gastric and duodenal perforation, which can hardly be differentiated from one another with certainty, and abscess of the liver or empyema and sloughing of the gall bladder and bile ducts. We could hardly now enter into the differential diagnosis of these, and will merely state that these upper abdomen lesions never cause bladder-symptoms unless the case has gone so far that there is general peritonitis.

So far we have been guessing at lesions from outside, now it is time to open the abdomen and still further perfect our diagnosis, or perhaps correct it, and as an easy method of describing this I may relate my last case, which has not yet been published :—

Miss B. K., aged twenty-seven years, was sent to me by Dr. Copley on October 10th, 1902. The history was as follows :—She stated that three years ago she got severe pain in the stomach and between the shoulders, vomiting and hæmatemesis. She was then treated in the Royal City of Dublin Hospital, and after a stay of a month in hospital she went home to the country apparently cured. About every three months after this pain occurred, and was relieved by the dispensary doctor. Lately she had returned to Dublin, and on October 9th, at 1 p.m., she ate a pork chop ; at 4 30 p.m. she had some tea, and then went to the station to see off some friends. Whilst there she was suddenly seized with pain, and fainted. Her friends placed her in a cab and drove her home, where she remained that night and all next day without seeing a doctor, her friends applying turpentine stupes, and giving milk and soda and brandy. At 5 p.m. on October 10th Dr. Copley was sent for, and found her

in great pain—temp. 101°, pulse 128. He told them to immediately bring her to Mercer's Hospital, whilst he drove off to inform me. I saw the patient in hospital at 6 p.m.; the abdomen was opened at 7 p.m., and she was put back to bed before 8 p.m., the operation having lasted a little short of an hour.

As it was 26 hours since perforation took place, it would be useless describing the pre-operative diagnosis, beyond saying that it was an advanced case of general peritonitis, with very marked distension for a nullipara. Upon opening the abdomen above the umbilicus the first thing that I noticed was that no gas escaped, but that very distended and inflamed intestines protruded in a very troublesome manner. This absence of obvious escape of gas had been previously noticed in at least one of my other cases, and it must be that the presence or absence of much free gas depends upon the class of bacteria set free in the peritoneal cavity. No fluid welled from the wound, which was different from the other four cases, where abundant fluid immediately appeared. I now quickly packed off the intestines and drew down the stomach, which was distended with gas; this distension I have invariably noticed, even though the perforation is freely open. Careful search failed to reveal any perforation on the anterior wall or in the duodenum, and on turning up the transverse mesocolon no adherent or thickened spot could be felt or seen on the posterior aspect. We began to think that the diagnosis might be wrong, so I thrust my hand down into the pelvis, and found that it was full of fluid. Whilst keeping the left hand inside, an incision was rapidly made as if for appendicitis, and fluid at once flowed out, the appearance and smell of which at once pointed to the stomach as the origin, so a clip was placed on the lips of the wound, and we returned to the stomach. The appearance of peritoneal fluid arising from stomach perforation is thin and greenish at first; later greenish yellow, with numerous tripe-like flakes of lymph floating in it and adhering to the intestines, &c. The smell is not fæcal in character like in infection lower down, where the *Bacillus coli*, &c., form abundance of fæcal-smelling gases. The smell in the class of cases under consideration is a peculiar nauseating, sour smell, which always reminds me of the smell of a badly kept fowl-run. The stomach was now picked up, and the omentum freely divided along the greater curve, thus opening the lesser sac of peritoneum, and on

working deep down to the left gas and fluid gushed up, and a perforation as large as a sixpenny piece was, with difficulty, demonstrated very high up on the posterior wall almost at the junction with the oesophagus.

The operation was concluded as has been described in the previous cases, except that, owing to the tremendous paralytic distension of the stomach and intestines, it was considered necessary to incise the stomach, large intestine, and small intestine, and empty them of gas before the final douching was performed; also a wick of gauze was left, passing down to the site of the sutured perforation. This was removed in 36 hours.

The case made an absolutely uneventful recovery, the only detail in after treatment worthy of notice being that the position of the patient was frequently changed to try and ward off hypostatic lung complications.

I think it has been fairly demonstrated that diagnosis does not cease when the case is handed over to the surgeon, and yet I have not mentioned the host of complications which have to be diagnosticated and promptly treated during the post-operative period.

It would be out of place in this Section to refer to operative treatment, but I would like to say that it is foolish for people to talk of doing these operations by the light of a dip candle, with the patient on a kitchen table, and no appliances except a knife, a needle and a piece of thread. Of course, any operation, even amputation at the hip-joint, can be done with a knife, a needle and a piece of thread, but it is not what can be done, but what ought to be done, which is the question for us to solve; and my conviction is, that it would be kinder to let the patient alone altogether if we are not determined enough to do a thorough operation, carefully cleaning out every infected corner of the peritoneal cavity with gauze sponges and normal saline solution.

ART. XIX.—*Clinical Report of the Gynæcological Department of the Rotunda Hospital, for the Year ending November 1st, 1902.* By R. D. PUREFOY, M.D. Dubl., F.R.C.S.I.; Master of the Hospital.

TABLE I.—LIST OF CASES TREATED.

DISEASE	Total	Cured	Relieved	Not Relieved	Died	REMARKS
VULVA—						
Vulvitis - - -	7	6	1	-	-	
Eczema - - -	2	2	-	-	-	
Labial cyst - - -	1	1	-	-	-	
Vaginismus - - -	3	2	1	-	-	
PERINEUM—						
Laceration, simple -	46	44	-	-	-	
„ complete -	7	7	-	-	-	
RECTUM—						
Cancer - - -	1	-	1	-	-	
Prolapse - - -	1	1	-	-	-	
URETHRA AND BLADDER—						
Cystitis - - -	4	1	3	-	-	
V. V. fistula - - -	-	-	-	-	-	
Caruncle - - -	3	3	-	-	-	
Urethritis - - -	4	3	-	-	-	
Urethral Calculus -	1	1	-	-	-	
VAGINA—						
Vaginitis - - -	15	14	1	-	-	
Cysts - - -	3	1	1	1	-	
Epithelioma - - -	1	-	-	1	-	
Cystocele - - -	9	7	1	1	-	
Rectocele - - -	3	2	1	-	-	
CERVIX—						
Erosions - - -	36	30	6	-	-	
Hypertrophy - - -	8	5	3	-	-	
Lacerations - - -	34	32	2	-	-	
Epithelioma - - -	7	1	-	6	-	
Cysts - - -	5	5	-	-	-	
Polypus - - -	7	7	-	-	-	
UTERUS CORPUS—						
Rudimentary - - -	1	-	-	-	-	
Infantile - - -	1	-	-	-	-	
Uterus septus - - -	1	-	-	-	-	
Pregnancy - - -	24	-	-	-	-	
Abortion - - -	14	14	-	-	-	

TABLE I.—LIST OF CASES TREATED.—*con.*

DISEASE	Total	Cured	Relieved	Not Relieved	Died	REMARKS
UTERUS CORPUS—<i>con.</i>						
Endometritis -	10	84	26	-	-	{ Pessary used in 24 cases
Retroversion -	53	9	44	-	-	
Retroflexion -	7	-	7	-	-	
Acute antelexion -	27	16	11	-	-	
Polypus -	6	6	-	-	-	
Carcinoma -	14	3	-	10	1	{ Both pregnant; one refused treatment
Procidentia -	2	1	-	-	-	
Prolapse -	?	-	-	-	-	
Subinvolution -	37	34	3	-	-	Two refused treatment
Fibroids -	21	7	11	-	1	
Gravid retroversion -	5	5	-	-	-	
Fixed retroversion -	11	-	11	-	-	
FALLOPIAN TUBES—						
Salpingitis -	6	-	6	-	-	
Pyosalpinx -	3	1	2	-	-	
Tubal pregnancy -	5	4	1	-	-	
OVARIES—						
Cystic -	17	-	-	-	-	
Cysts -	13	13	-	-	-	
Dermoids -	3	3	-	-	-	
Prolapse -	41	-	-	-	-	
Oöphoritis -	3	-	3	-	-	
Carcinoma -	1	-	-	1	-	
MISCELLANEOUS—						
Perimetritis -	20	3	17	-	-	
Parametritis -	6	4	1	-	1	
Hernia -	?	-	-	-	-	
Phantom tumour -	1	-	-	-	-	
Sapremia -	3	3	-	-	-	
Mastitis -	1	1	-	-	-	
Hæmatocele -	2	2	-	-	-	

AMONGST the cases illustrating diseased conditions of the external genitals recorded in my Report for the year ending November, 1902, there are none of any special rarity or calling for special notice. Eczema was met with twice—in one instance chiefly affecting the left labium; both patients were under forty years of age, and both appeared well at time of discharge from hospital. In most cases of eczema vulvæ strict attention to the condition of the vagina will be requisite to effect a cure; and in one very aggravated case

recently under my care vaginal douches containing ichthyol, used several times daily, contributed largely to the patient's recovery. In three patients some degree of vaginismus was found; all were under thirty years of age; all were childless, though a few years married; in one there was a distinct history of syphilis, beginning with sores on external genitals; in all the ovaries were prolapsed; and in all very marked improvement, if not cure, followed the use of measures suitable to the uterine and vaginal disease present. That there is a neurosis, evidenced by hyperæsthesia and spasm of the introitus, apart it may be from uterine and vaginal disease, cannot be doubted, notwithstanding Tait's denial of the fact.

TABLE II.—OPERATIONS.

Alexander Adams' Operation	-	-	-	-	1
Colporrhaphy	-	-	-	-	11
Colpoperineorrhaphy	-	-	-	-	3
Submucous Myomata	-	-	-	-	6
Vesico-vaginal Fistula	-	-	-	-	2
Posterior Division of Cervix	-	-	-	-	7
Removal of Caruncle	-	-	-	-	3
„ Cervical Polypi	-	-	-	-	7
„ „ Cysts	-	-	-	-	5
Perineorrhaphy (Lawson Tait)	-	-	-	-	51
Emmet's Trachelorrhaphy	-	-	-	-	25
Schröder's „	-	-	-	-	10
Saenger's „	-	-	-	-	1
Colpotomy	-	-	-	-	1
Vaginal Hysterectomy	-	-	-	-	1
Abdominal Hysterectomy for Fibroids	-	-	-	-	8
„ „ for Cancer	-	-	-	-	5
Ovariectomy	-	-	-	-	13
Salpingo-oophorectomy	-	-	-	-	3
Cœliotomy for Tubal Pregnancy	-	-	-	-	5
„ Exploratory	-	-	-	-	7
Removal of Urethral Calculus	-	-	-	-	1
Hysterectomy for Cancer	-	-	-	-	5

In the first of the cases in Table III. the patient, a healthy unmarried woman, was unaware of the existence of the uterine enlargement, and sought advice solely on account of retention

TABLE II.—VENTRAL CELIOTOMY; HYSTERECTOMY (FOR FIBROIDS).

No.	Name	Age	—	Disease	Result	REMARKS
11135	E. O'R.	36	Single	Fibroid uterus	Cured	Uterus uniformly enlarged, reaching to umbilicus.
11215	E. B.	42	Married	Multiple interstitial fibroid	"	Cervix so elongated as to protrude from vulva; uterus reaching above nearly to umbilicus.
11255	A. S.	30	—	Uterine fibroid	"	Large fibroid lying in Douglas's space.
11294	M. W.	45	—	"	"	Tumour growing from fundus uteri.
11340	E. A.	52	Married	Fibroid uterus	Died	Two small perforations in wall of bowel, possibly caused by clamps used to secure veins; uterus size of seven months' pregnancy.
11345	M. M'D.	40	—	"	Cured	—
11383	K. M'C.	43	—	Uterine fibroid	"	Tumour size of cocoa nut, chiefly involving posterior aspect of uterus.
11524	W. M.	40	—	Three large fibroids, reaching to hypochondrium	"	Parietes 3 inches thick; supra-vaginal amputation.

of urine, which occurred suddenly, owing to the uterus becoming lodged in brim of pelvis. In the second, remarkable elongation of vaginal cervix was present, and probably preceded the growth of the fibroids. In the third, the appendages of the right side were not removed; on the left side an abnormal branch of uterine artery required separate ligature. In the fourth, there was so much difficulty in opening anterior vaginal fornix that I gave up the attempt, and a small portion of cervix was left, through which, to my great surprise, I found, some weeks afterwards, two of the vaginal ligatures protruded. In the fifth, the veins were unusually large and numerous, and I fear that in applying clamps to control the bleeding from them the lesions, subsequently found in the bowel, and which caused death, must have occurred. In the sixth case, some days after the abdominal stitches had been removed, a very unusual secondary growth developed rapidly near the upper end of cicatrix, and in a week formed a projection, two inches in height, of a mushroom shape. It was removed by an elastic ligature, being quite insensitive, and was pronounced by Dr. Earl and Dr. Neville to be organised blood-clot. More than a year ago, under exactly similar conditions of time and place, a patient of mine developed such a growth after ovariectomy. Bland Sutton avers that these growths have an epithelial origin; but my cases show that this statement requires qualification. In most of these cases I derived considerable assistance in opening the vaginal fornices from the use of the forceps which I have figured in a former Report.

HYSTERECTOMY FOR CANCER.

CASE I.—E. C., single, aged sixty, had been for more than a year troubled with severe uterine bleeding, with much pain in back and left side. The body of uterus was palpably enlarged and bulging on left side, apparently from the presence of a fibroid, and the cervical canal gaping. When dilatation was nearly completed I had the great misfortune to perforate the uterine wall on right side; and as the condition of the endometrium and the history rendered the existence of cancer very probable, I removed the uterus by the abdominal route as soon as the patient could be prepared. The patient at first did well; symptoms of sepsis

developed, and death occurred within three days. The peritoneal flaps lay in such good apposition that they were not sutured ; and I deeply regret that I did not, at the time of operation, provide for vaginal drainage.

CASE II.—M. A. K., aged forty ; twenty-one years married ; suffering from excavating carcinoma of cervix ; body not enlarged ; some thickening in both broad ligaments, especially the right. The diseased tissue having been removed as thoroughly as possible, the thermo-cautery was applied, and abdominal hysterectomy performed. Satisfactory convalescence, somewhat delayed by troublesome vomiting and some suppuration in course of abdominal wound.

CASE III.—M. N., forty-two, twenty-one years married, was afflicted with a similar condition of uterus as in foregoing case, and, in addition, two ovarian cysts. One of the cysts removed furnishes a beautiful example of Rokitansky's tumour, and is now preserved in the Hospital Museum. In this case some swelling at left side, suggestive of extension to the broad ligament, was found at the time of operation to consist of adherent omentum, Fallopian tube, and coil of intestine. Convalescence very favourable.

CASE IV.—E. C., aged thirty-eight, seventeen years married, two children ; carcinoma of cervix and vaginal roof. A small patch of the disease also on posterior vaginal wall, where extremity of cervix lay in contact with it. Abdominal hysterectomy, and good recovery.

CASE V.—H. F., twenty years married, aged fifty-eight, for three years had been troubled with offensive discharge, and had been curetted three times. When she came under my observation, the cervix appeared healthy, but the uterus was distinctly enlarged and retroverted ; cavity four inches. The scrapings obtained with curette indicated malignant adenoma ; and, as the introitus vaginæ was roomy and uterus mobile, though some adhesions existed posteriorly, I performed vaginal hysterectomy, and uneventful recovery followed. The slow advance of the disease in this case is worthy of remark, and especially so the results of Dr. Neville's examination of the uterus, the report of which follows :—

“*Macroscopic Examination.*—For pathological examination and for preservation of the specimen a complete bilateral hemisection

of the uterus as removed was made. This section showed that there was a well-marked antelexion, the measurements of the different parts being as follows:—Length of body, 6.5 c.m.; length of cervix, 4 c.m.; greatest width of body, 6 c.m. As anticipated, the macroscopically apparent disease appeared limited quite sharply to the endometrium of the body, which averaged about 1 c.m. in thickness, resting upon a clean, unbroken line of muscular wall.

"The cervical canal appears healthy, the arbor vitæ arrangement of its lining membrane being particularly well marked. Careful examination of the cervical walls show a few cysts, besides traces of some other pathological condition, but there is nowhere any superficial roughening or loss of substance.

"*Microscopic Examination* completely confirms the diagnosis made from curettings. The thickened corporeal endometrium is found to consist entirely of a malignant adeno-papillomatous growth, which shows very characteristically the typical form of that cancer. It consists of main stems of connective tissue stroma, from which secondary stems arise, these terminating in fine fimbriæ, covered by many layers of epithelium. This growth involves the endometrium of the entire body of the uterus. It nowhere penetrates the muscular walls, and stops short suddenly at the level of the internal os.

"Sections through the breadth of the cervical tissue show that here we have an unsuspected—and in no way outwardly evidenced—adeno-carcinoma occupying the depths of its muscular tissue. The specimen is therefore of pathological interest as presenting two typical forms of cancer—(1) an adeno-papilloma confined strictly to the endometrium of the body, and (2) an adeno-carcinoma confined equally strictly to the muscular portion of the cervix."

TABLE IV.—SALPINGO-OÖPHORECTOMY.

No.	Name	Age	Disease	Operation	Result	REMARKS
—	M. O'B.	22	Pyosalpinx -	Left	Cured	Gauze drain used
11247	M. P.	27	Ovarian cyst -	Left	"	See under "Tubal Pregnancy"
11394	N. C.	23	Uterus absent -	R. & L.	"	

SALPINGO-OÖPHORECTOMY.

In the case of M. O'B. the pus tube was ruptured in process of removal, and, after careful cleansing, a gauze drain was inserted for twenty-four hours. The clinical history, as also the local conditions in the case of M. P., suggested tubal pregnancy; and at time of operation a slightly gaping condition of the tubal ostium, as well as some clots close by, lent probability to the diagnosis, but the small ovarian cyst, also present and bound up with the tube, may have caused the above noted state of the tube and favoured a reflux of menstrual blood.

In the case of N. C. the uterus was represented by a small nodule of firm tissue, not bigger than a hazel nut; the tubes were long, attenuated, and cord-like, but both ovaries were unusually large and abounding in cysts. The menstrual mola, recurring every four weeks, was attended with much suffering, shivering and distinct rise of pulse and temperature. Complete relief followed the operation.

TUBAL PREGNANCY.

CASE I.—M. J. B., aged twenty-eight, seven years married, four children, last menstruation occurred on September 20th. Admitted to hospital, 8 o'clock p.m., on October 1st, 1901, in a condition of great prostration; rapid, feeble pulse; extreme tenderness of belly and some bleeding. During the two preceding days severe attacks of abdominal pain, attended with faintness and vomiting, had occurred. Restorative measures were used for a few days, and, during this time, a piece of decidua escaped from the vagina. The uterus, on examination, was found normal in position; body enlarged, cervix soft, and a swelling, size of a lemon, lay to left of uterus. A week after her admission coeliotomy was performed. Above and behind uterus there was a mass the size of a fist, firmly adherent to rectum, consisting of the dilated and ruptured tube and firm blood-clot, containing an ovum, about as large as a walnut. Clots in large quantity lay in and around pelvis and were carefully removed, the peritoneal cavity flushed with saline solution, and the wound closed with a peritoneal continuous silk suture and silkworm-gut through parietes. Good recovery.

CO-EXISTING UTERINE AND TUBAL GESTATION.

CASE II.—R. B., aged twenty-three, four years married. Her

two former pregnancies had ended prematurely. Had been at various times under the care of two former Presidents and a Secretary of our Section, who suggested an operation. Some months before illness to be now described consulted me, suffering from pelvic peritonitis and menorrhagia. In October, 1901, menstruation was due on the 15th, but did not occur, and some days afterwards abdominal pains began to occur fitfully, attended with irregular, slight bleedings. Nausea also, chiefly at night, and pains in breasts. On more than one occasion the abdominal pains were attended with faintness. While lying in bed micturition was sometimes difficult. On the 22nd of November I was asked to visit her; the uterus was found somewhat enlarged and pushed to the right by a soft mass lying in Douglas's space, but reaching above pelvic brim, and having on its highest point a small sensitive body, causing an easily observed projection of abdominal wall. The cervix was soft and gaping. My diagnosis was subperitoneo-pelvic pregnancy. Dr. Carton expressed the opinion that it was an ordinary pregnancy, complicated by the presence, in addition, of a swelling, ovarian or otherwise. In the end both our opinions were justified. On opening the cœlom I found a considerable mass of blood-clot, investing and concealing the tube, and covered by a layer of peritoneum, evidently continuous with the posterior layer of left broad ligament. On the summit of the swelling was placed the left ovary, forming the projection already noted when examining the patient externally. The uterus was the size of a two and a half months' pregnancy. The tube and adherent clots were removed, the peritoneal cavity washed out, and the abdomen closed. Some hours later the pulse became alarmingly rapid, but, as there were no other signs of bleeding, I attributed this, and no doubt correctly, to a small injection of morphin which had been given for the relief of pain. The subsequent convalescence was all that could be desired, but I regret to add the uterine pregnancy ended in an abortion a few weeks later. I have already, in a former Report, detailed a case of concurrent uterine and tubal pregnancy in which I operated successfully for the removal of the latter condition. The uterine pregnancy in that instance continued till the seventh month—i.e., four months after the removal of the tubal gestation. The acceleration of pulse which sometimes follows the injection of morphin I have observed several times.

CASE III.—E. S., aged twenty-five, 3-para. On December 17, 1901, menstruation occurred ten days beyond the proper time, and during the next few weeks much pain and intermittent hæmorrhages took place; for the relief of which her doctor in the country curetted her. On admission to hospital, January 30, the uterus was found of normal size, displaced to the right by a swelling at the left side, of tolerably firm consistence, and adherent to uterus. I operated on February 4, finding a considerable amount of fluid and clotted blood in cœlom, the left tube distended, the fimbriated extremity surrounded by adherent clots. A hæmatoma in the ovary was turned out, and the cavity closed by a silk suture. Recovery uneventful.

CASE IV.—M. P., described under the heading "Salpingo-öophorectomy." The conditions present in the left tube were strongly suggestive of an early tubal abortion.

CASE V.—H. F., aged twenty-four, 2-para. Patient believed herself to be seven weeks pregnant, and on May 2, 1902, was attacked with very severe pain in lower belly, accompanied by slight uterine bleeding. These continued for some hours, and, after an intermission of some days, recurred, the bleeding being then more profuse than on the first occasion. On admission to hospital, May 10, the uterus was found to be enlarged and displaced to the left by a swelling, which also occupied Douglas's space, extending nearly to the left side. At the operation, carried out shortly after, blood in some quantity was found free in abdominal cavity, and the right tube was ruptured. It was removed, the cavity flushed out, and operation completed as usual, and followed by good recovery.

It is worthy of note that these cases of tubal gestation were met with in young and parous women, in whose child-bearing no long pause had occurred, and who did not present the conditions which are so often mentioned as favouring the occurrence of extra-uterine pregnancy.

ALEXANDER ADAMS' OPERATION.

This operation was performed on a married woman, 1-para, who suffered much from backache and dysmenorrhœa, apparently due to a retroverted and somewhat adherent uterus. Under treatment these conditions underwent much improve-

ment, and it was found possible to replace the uterus; but as a pessary was badly tolerated, I determined to try the effect of shortening the round ligaments by the above-named method. The structures in question were well developed and found without difficulty; but when convalescence was established the change in the position of the uterus and the relief to the patient's sufferings were inconsiderable. A few months later we admitted a patient on whom Mr. Alexander had operated similarly five years ago. Since then she had been three times pregnant, and aborted each time at the third month. When under our observation the uterus was retroverted.

OVARIOTOMY.

In all of these, where it was practicable, I stripped peritoneum of the cyst enough to stitch over the end of pedicle. In the case of M. T., part of the parietal incision passed through omentum, too firmly adherent to be safely detached. A large cystic tumour was present at the time of delivery in the case of M. D., and six weeks subsequently its removal was undertaken, and effected without difficulty or bleeding. Very soon afterwards the pulse rose from 96 to 120, and continued at this rate for 13 hours, and gradually fell to 90, and remained quiet during convalescence. In the case of B. D., some weeks before her admission very severe abdominal pain occurred, with symptoms of peritonitis, and doubtless synchronised with the rupture of one of the dermoids. At the time of operation large quantities of gelatinous matter, evidently identical with the cyst contents, were found free in the *cœlom*. M. N. presented the very rare coincidence of double ovarian cysts with malignant disease of uterus, necessitating panhysterectomy as well as double ovariectomy. One of the cysts, as shown by the beautiful drawing executed by Dr. Paul Carton, is an example of the very rare tumour known as Rokitsansky's. The other cyst was intraligamentous in growth. The uterine disease was excavating epithelioma of cervix, and was so advanced that the removal of the uterus by the vagina was impracticable. The patient was so prostrate at the conclusion of the operation that saline transfusion was carried out with much benefit, and a satisfactory convalescence followed. In the case of C. G., an ovarian cyst of

TABLE V.—OVARICTOMY.

No.	Name	Age	Disease	Operation	Result	Remarks
11116	M. G.	41	Cyst	R.	Cured	Patient has aortic and mitral murmurs.
11119	M. D.	24	Dermoid	L.	Cured	
11125	M. T.	31	Cyst	R.	Cured	
11153	M. D.	29	Large cyst	R.	Cured	Pregnancy at term had ended 4 weeks before admission.
11176	B. D.	49	Double dermoids	R. & L.	Cured	Closely simulated tubercular peritonitis.
11242	M. N.	42	R. & L.	Cysts	Cured	One was an example of Rokitanaky's tumour; uterus removed at same time for epithelioma.
11304	E. T.	35	Dermoid	R.	Cured	Omentum adherent to bladder. Twisted pedicle.
11440	E. G.	34	Intraligamentous	L.	Cured	
11467	R. K.	38	Intraligamentous	R.	Cured	
11557	C. M.	40	Cyst.	L.	Cured	Tumour caused obstruction to delivery.
11573	E. R.	56	Very large cyst	—	Cured	
11601	J. T.	37	Suppurating dermoid	R.	Recovered	

moderate size had burrowed downwards in broad ligament, and so involved the side of uterus that its separation gave rise to troublesome bleeding from uterine wall, requiring several stitches to control it. J. T. was admitted to the Maternity on account of tumour occupying pelvis and obstructing delivery. Its consistence led me to regard it as a uterine fibroid which might best be dealt with at the time by pushing it out of pelvis. This was done, though with difficulty, and easy delivery followed. Very slight pyrexia was present during the puerperium, and the patient left the hospital, promising to return in a week. Unfortunately more than two months elapsed before she did so, and her condition then of prostration and fever left little hope of saving life by any treatment. A few hours after her admission I opened the cœlom and found in it quantities of purulent fluid, flaky lymph, and hair, which had escaped from a suppurating dermoid on the right side, widely adherent to brim of pelvis and cæcum. The cyst wall and pedicle had been so altered by inflammation and suppuration that no proper pedicle was distinguishable, and after copious flushing the wound was closed, no exploration of the pelvis being possible, owing to the patient's condition. Several days later a swelling was found in Douglas's space and opened per vaginam. Six weeks later the patient was allowed to return home, but her condition then did not encourage the hope of ultimate recovery.

EXPLORATORY LAPAROTOMY.

CASE I.—A. M. S., aged forty-two, admitted on account of metrorrhagia, troublesome for many months previously. A fibroid uterus of very irregular outline, and reaching nearly to navel, was easily diagnosticated; and I operated with a view to performing panhysterectomy, but the portion of the uterus in the pelvis, and the numerous firm fleshy adhesions between uterus, intestines, and omentum, completely hid the appendages, and would have made the contemplated procedure so dangerous that I abandoned the idea, and closed the peritoneal cavity. Some weeks later a large uterine polypus was extruded into vagina, and its removal was followed by complete recovery.

CASE II.—B. S., aged sixty, admitted in April, 1901, complaining of loss of flesh and copious vaginal discharge, often bloody, and of

late offensive. A sloughing uterine polypus was found lying in vagina, attached to the uterine wall by a long pedicle. The uterus was somewhat enlarged. The polypus was removed, iodised phenol applied to cavity of uterus, and the patient was soon well enough to return home. In March of the following year she returned, when we found a large, firm abdominal tumour apparently originating from uterus, reaching above umbilicus, and adherent in all directions. An exploratory operation showed it to be a huge sarcomatous growth, involving uterus and intestines. Though there was no reason for suspecting it, I cannot help thinking that the beginning of the disease may have been present at the time of her first admission to hospital, and that life might have been saved if the uterus had been then removed. A very similar case is recorded in my Report of last year. An unmarried woman was admitted, suffering from offensive vaginal discharge, and through the os externum, open to about the circumference of a shilling, could be distinctly seen some sloughing tissue, which proved to be a polypus of considerable size, and apparently benign, enclosed in a cavity, consisting of the enormously dilated cervical canal. By incising and dilating the os it was possible to remove the growth piecemeal. The uterine cavity above was small, but contained some small nodular projections, the nature and importance of which I failed to recognise. The patient went home apparently in excellent health, but in a few months returned in a hopeless condition, owing to sarcoma of the uterus.

CASE III.—M. B., aged forty-three, proved, on exploration, to have malignant disease of stomach, with ascites ; pelvic organs normal.

CASE IV.—L. B., aged thirty-nine, in a very cachectic condition, with general enlargement of the belly, caused by a very irregular growth, the nature of which was not ascertainable by palpation. An exploratory opening showed numerous malignant nodules, apparently springing from left ovary.

CASE V.—C. R., aged twenty-six ; tubercular peritonitis with large quantity of ascitic fluid ; relieved by opening.

CASE VI.—A. B., aged forty-three, admitted suffering from general enlargement of belly, apparently due to fluid in a thick-walled cyst, the limits of which could not be distinctly made out. Vaginal examination did not afford any aid to diagnosis. When diarietes were incised, they were found to be incorporated with a

cyst of considerable size, evidently a multilocular ovarian cyst, and the contents consisting of flaky pus. The cavity was washed out, some secondary loculi were opened, and the whole was packed with iodoform gauze. Some weeks later an opening was made in the right flank, and the opening in front was allowed to close. For a while such improvement took place that recovery seemed possible, but after some months the patient lost ground and died. An apparently more hopeless case than this, the cyst being much larger, but with similar contents, was mentioned in one of my former Reports. In it I was able to effect vaginal drainage, and the patient, after some weeks of desperate illness, recovered, and was alive when heard of some years subsequently.

CASE VII.—K. G., aged twenty-nine, admitted with a pulse of 140, temperature 102°, complaining of weight and pain in belly. By vaginal examination irregular swellings, of varying consistency, could be felt in pelvis. On opening cœlom extensive evidence of tubercular peritonitis was found, and numerous adhesions of intestine and omentum in pelvis.

ART. XX.—*Immunity*.^{*} By ROBERT JAMES ROWLETTE, M.D. ;
Demonstrator of Anatomy in the School of Physic in
Ireland, Trinity College, Dublin.

ALTHOUGH some facts of immunity have been known for centuries, yet it is only within the last few years, following on the discovery of the microbic origin of most infectious diseases, that any scientific attempt has been made to search out its biologic cause. For instance, it has always been recognised that one attack of certain diseases, such as small-pox or scarlatina, protects the patient after recovery from another attack of the same disease. The first practical use made of this knowledge was the custom long in use among the Turks of inoculating with small-pox. A mild case of the disease was chosen, and a child was then infected with variolous matter. He usually developed the disease in a comparatively milder form than when he received the infection otherwise than by inoculation, but naturally this was not a rigid law, and, at any rate, he was always a source of unmodified infec-

^{*} A paper read before the University Biological Association, March 19, 1903.

tion to those around him. The custom, in spite of these obvious drawbacks, was undoubtedly useful, and when we remember the frightful mortality formerly due to small-pox, one cannot wonder at any means taken to prevent it. Consequently, inoculation was introduced to England and the West of Europe from Constantinople in the year 1721, and continued in use, in spite of statutory prohibition and many accidents, until well on in the last century, long after the discovery of vaccination. A friend of my own, not yet past middle life, was, as a child, inoculated with small-pox in the West of Ireland.

The next instance of artificial production of immunity was, of course, vaccination. Jenner's assumption was that vaccinia (or cow-pox) and small-pox are the same disease, modified by running in different species, and his deduction was that a patient recovered from cow-pox had a certain protection against small-pox. The deduction was at once proved to be correct, and the assumption, after a century's controversy, may now be taken as established.

In addition to these instances of acquired personal immunity, it has long been known that certain species and certain races were very insusceptible to certain diseases; and, again, that some individuals exhibit a considerable degree of immunity against diseases from which they have never suffered. For instance, dogs are not susceptible to tubercle, nor fowl to tetanus, and native races in the habitat of malaria and yellow fever do not suffer from these diseases. Again, many of us have been exposing ourselves freely for years to the contagion of such very infectious diseases as measles, scarlatina, and diphtheria without contracting them; in such cases there must be an excessive resistance or relative immunity to these infections, which probably increases with exposure. It would not be correct, however, to suppose that in any of these instances there is an *absolute* immunity. Dogs can be given tubercle; fowls can be made to contract anthrax; and none of us know what to-morrow may have in store for us in the shape of this, that, or the other infectious disease. Insusceptibility is of all degrees, varying temporarily with fatigue and other such conditions, but never amounting to an absolute immunity.

In order to get at an understanding of the biological conditions underlying the state of immunity, we shall learn most from the study of its artificial production in animals. Animals can be immunised against a disease by the continued injection of non-fatal doses of the specific organism. This is evidently the same process as takes place in a patient recovering from an infectious disease. But this is not all; bacteria grown outside the body for some time in any ordinary culture medium produce in it certain substances which on injection cause all the general, but not the local, symptoms of the disease. These substances are known as *toxins*, and similar substances are produced in the tissues during the course of a disease resulting from bacterial invasion. It is found that immunity can be produced as well by the use of these toxins prepared in culture media as when the living organisms themselves are injected.

These two methods are usually described as constituting *active* immunisation. But it is further found that the blood serum of an animal which has been highly immunised by one of these active methods can, by injection into another animal, bring about a state of immunity distinguished as *passive*.

This fact naturally suggests to us that at least part of the process of immunisation consists in the production of substances which either are hostile to the bacteria themselves (i.e., *antimicrobial*) or have the power of neutralising their toxins (i.e., *antitoxic*). The presence of both these classes of substances is now certain, and though a particular serum is rarely exclusively antitoxic or exclusively antimicrobial, yet it will be better to treat of the two functions separately.

To prepare an antitoxin, an animal is immunised by the continued administration of toxin, the dose being gradually increased. After a period varying from a few weeks to several months, it is found that the serum has a marked antitoxic power—that is to say, if some of the serum and some of the toxin be mixed before injection the toxin is found to have lost its power. The toxin and antitoxin have neutralised each other, each being, of course, specific to the disease under investigation. Though neither substance has yet been isolated it is held that this neutralisation is a definite chemical

process. If a sufficiently powerful antitoxin be prepared, not only will it antagonise a toxin previous to injection, but if it be injected shortly after the latter, the toxic effects are diminished or disappear.

This is what actually happens in the serum treatment of diphtheria. It is a disease in which the general symptoms are due only indirectly to the bacteria themselves through the intermediation of the circulating toxins. Consequently, these latter can be neutralised by a suitable dose of antitoxin, and the injurious effects of the disease thereby greatly diminished. It should be added that anti-diphtheritic serum is not in any sense antimicrobial, but in reality forms an excellent culture-ground for the diphtheria bacillus.

In all cases of artificial immunisation, whether active or passive, the antitoxins do not persist, but pass away in the secretions. They are found both in the urine and milk. The immunity, however, is much more permanent, and while the antitoxins disappear in weeks or months, the immunity lasts for months, or more commonly years. In natural immunity, too, antitoxins are absent. Strictly speaking, then, immunity has no relation to the presence or absence of antitoxins, which are only concerned with the nullification of bacterial poisons, but have no power of protection against the bacterial invasion itself.

When we come to study the defence of the body against bacteria, we are met with an astonishing phenomenon, first pointed out by Pfeiffer, but since extended in a marvellous way. Pfeiffer found that when a guinea-pig was immunised by the administration of cholera vibrio (the organism of Asiatic cholera) its serum obtained the power of killing and digesting these vibriones. It became markedly *antimicrobial* towards the specific organism to which it had been immunised, and possessed this property whether in the body or freshly drawn. This action is known as *bacteriolysis*.

But on experiment with other substances than bacteria it was found that a similar reaction occurred towards nearly all organic bodies. For instance, if a guinea-pig were treated for some time to injections of rabbit's blood, the guinea-pig's serum gradually gained a specific destructive power towards the rabbit's red corpuscles. This is called *hemolysis*, and is

in every way a parallel action to bacteriolysis. Simultaneously, the guinea-pig's serum obtained the power of immediately precipitating rabbit's serum. When similar experiments are conducted with spermatic fluid it is found that the serum of the animal soon gains the power of digesting the spermatozoa of the particular species from whom the fluid has been drawn. In addition to the bacteriolytic power of the immunised serum, and probably subservient to it, are precipitating and agglutinating actions towards the specific bacteria. It is therefore evident that a number of specific, so-called, "anti-bodies" can be developed in the blood-serum by the administration of various organic bodies.

It is only necessary to suggest one or two bearings on practice of these facts. The properties just mentioned of "precipitation" and "agglutination" are made use of as specific tests for bacteria, the latter, in the case of typhoid fever, being the well-known clinical test generally called by the name of one of its early describers, M. Widal. On the other hand, the hæmolytic action of an immunised animal's serum is likely to be of great medico-legal use, as it is the only known means of distinguishing accurately the blood of different species.

But of what nature are these "anti-bodies"? Whence do they come? And to what extent are they specific?

Bacteriolytic, or to use the more general term, cytolytic, serum loses its destructive power when heated above 55° C. for half an hour. If, however, some fresh, but not specially prepared, serum be now added, its power is restored. Its action, then, is the result of two bodies—one which is stable, resistant to heat, specific; and another which is unstable, destroyed by heat, and present in normal serum. The first is known as *immune body*; the second is its *complement*. For cytolytic action both the immune body and its complement must be present.

There has long been controversy as to the origin of these substances in the body, but it may now be taken as fairly certain that both are produced by the leucocytes.

I have stated very roughly and crudely some of the most outstanding facts of immunity. It remains to mention the theories which have been put forward to account for them. Of historical interest only is the "exhaustion" theory associ-

ated with the name of Pasteur. It supposed that for successful bacterial invasion of the tissues there is necessary in them a particular pabulum; once this is exhausted it cannot be replaced. This theory is no longer able to account for the known facts, and is disproved by the phenomenon of passive immunity. The introduction of a small quantity of immune serum could not have any exhausting influence on pabulum present in the tissues or juices of the body.

The theory of "retention" associated with Chauveau's name held that the organisms themselves produce substances which finally prohibit further growth; that these hostile substances are retained in the body. Though this furnishes an explanation of some of the facts it is not sufficient. It is unlikely that active, specific chemical substances persist free in the body for years; and, as a matter of fact, as I pointed out above, antitoxins leave the body by the secretions. The blood is found to be free from antitoxin, although the system has not lost its immunity. Immunity and antitoxin appear *pari passu*; one persists and the other disappears. Not only this, but it is found that the blood serum of an immune animal is itself a very good culture-ground, showing that the cells, and not merely the juices, must be taken into account in an explanation of immunity.

More valuable by far is Metchnikoff's theory of *phagocytosis*, or, as it has become in a more developed condition, the "cellular" theory. He drew attention to the property the white corpuscles have of ingesting and destroying bacteria. In a susceptible animal this action was almost absent, in an insusceptible very marked. Undoubtedly this process, which he called *phagocytosis*, is one of the most valuable means of defence possessed by the organism. In this form, however, the theory furnishes an explanation of only a small number of the known facts of immunity. Metchnikoff, however, and his pupils have with great brilliancy endeavoured to preserve the credit of the white corpuscles by showing, and with success, that the anti-bodies are in great part produced by the leucocytes.

Originally in opposition to the "cellular" theory was the "humoral" theory held by Behring and his school. According to them the protective bodies circulated in the fluids,

and were not fixed in the cells. An easy compromise between these two theories is now practically arrived at, in that the anti-bodies while secreted by the cells are actually found in the juices.

None of these theories, however, really go to the root of the matter, and it remains for Ehrlich's supposition to furnish a complete and radical explanation of the known facts, as well as to throw light for further investigation. The protoplasm of the cell may be regarded chemically as a very large and complex molecule, with various smaller atom-complexes or "side chains" attached. It is only by actual chemical combination with the cell-protoplasm that food particles can be made use of. The side-chains, of enormous number, have each a certain affinity for a particular food-molecule. The side-chain combines with food-molecule, and thus the latter is brought into relation with the cell-protoplasm.

Now, a toxin is either a proteid or a body very much resembling a proteid. It may be taken as being a complex body, made up of two atom-groups. By one of these, called by Ehrlich the *haptophore* group, it can be brought into union with a particular side-chain for which it has chemical affinity; by the other, or *toxophore* group, it exerts its toxic influences on the cell. The toxophore group has no power to act on the cell until it is brought into relation to it by the haptophore group. The latter can only unite with a side-chain for which it has chemical affinity. A certain time is necessary after this union before the toxins can begin to act on the cell.

Assume that a haptophore group and a side-chain have united. The latter is no longer any use to the cell, and is cast off. Another similar side-chain is produced, and this again is occupied by a haptophore group, and cast off. The cell continues reproducing side-chains of the same sort, but following a well-known biological law it produces too many, or *over-compensation occurs*. Unoccupied side-chains are thus cast off, and travel freely in the juices of the body. But, though no longer attached to cell-protoplasm, they retain their affinity for the haptophore group in the toxin; and so, when a free side-chain meets a toxin molecule, it unites with the haptophore group. The latter being thus occupied, it

cannot unite with a fixed side-chain, and consequently the toxophore group cannot act on cell-protoplasm; in other words, the toxin is rendered inert. *The free side-chains, according to Ehrlich, are the antitoxin.*

It will be seen that this theory brings the phenomena of antitoxins into line with well-known chemical and biological laws. The side-chains are assumed to exist for definite nutritive purposes. The principle of over-compensation is well known. That there are two groups in the toxin molecule is proved by the following observations. If tetanus toxin be injected into a guinea-pig it produces definite effects, no matter how soon it is followed by antitoxin. The side-chains of the central nervous system, which have an affinity for tetanus toxin, harbour it by its haptophore group at once, although its actual toxic effects do not occur for some hours. But if before injection the tetanus toxin be mixed with an emulsion of fresh brain of guinea-pig, it is rendered quite innocuous. Its haptophore groups have united with the side-chains in the emulsion, and on injection its toxins are powerless.

Ehrlich's theory, therefore, gives a very satisfactory explanation of the properties of *antitoxic* serums, but we must inquire how it bears on *antimicrobial* serums, and the facts of cytolysis.

In cytolysis we have to account for the specific "immune body" only, as the other necessary element, the "complement," is present in normal serum. It is probable that the latter is a ferment. Now, in the ordinary course, the cell needs the aid of ferments to break up certain of the food-molecules which reach it. For this purpose we may assume that the cell-protoplasm possesses a number of double-armed side-chains, one for the proteid food-molecule and one for the assistant ferment. Now, suppose that one of these arms has an affinity for the molecules of the invading organic element, whether bacterium, red blood cell, spermatozoon, or other body, and the other for the necessary complement, and cytolysis or digestion of the invading body is explained. In exactly the same manner as antitoxin is formed by single-armed side-chains, so by the production of an excessive number of double-armed side-chains is immunity attained. The free side-chains in this case are the "immune bodies."

But whence comes the persistence of immunity? How is it that the immune bodies do not, as do the antitoxins, pass away in the secretions?

There is no reason to doubt that they do so pass away, but meanwhile the cells have learned a lesson. For some time the cells continue to over-produce immune bodies, and they persist for a little after the invading bacteria have been destroyed. Thus for many months, or even longer, after an attack of typhoid fever the blood still contains agglutinins, and will clump the typhoid bacillus. Though the agglutinins are not at all identical with the immune bodies, yet there is a certain relation between them, and the presence and quantity of agglutinins afford a convenient, if rough, estimate of the anti-bodies present; but gradually the production of anti-bodies ceases. A number of the cells of the body, however, have become specialised for the production of anti-bodies, and this specialisation lasts, and on the slightest stimulation, by new bacterial invasion, or otherwise, their function again appears. Physiologically this function seems to be secretion, and it is increased by the administration of pilocarpin.

As regards natural immunity, Ehrlich's theory gives an easy explanation in two ways—there may be an entire absence of the side-chains necessary to bring about chemical union with the cell; or, on the other hand, immune bodies may be naturally present. This latter condition might be a result of the presence in the juices of food-molecules closely resembling the molecule of the invading parasite.

I said that Ehrlich's theory, in addition to explaining known phenomena, throws a light forward. If the host can protect itself by producing anti-bodies which are injurious to invading parasites, cannot the latter also produce anti-anti-bodies which protect them? This is now established as a fact by Dr. Ainley Walker, who succeeded in immunising bacteria against immune serum by the simple expedient of growing them in it. This is, as a matter of fact, what takes place in the well-known method of exalting the virulence of an organism by passing it from one animal to another of the same species. With a very different class of parasites Weinland has recently shown that intestinal worms protect themselves against the digestive juices by the production of a ferment known as

"antipepsin," its effect being to inhibit the normal digestive action of pepsin.

We now get an idea of the conflict which is actually waged between the invading army of parasites and the cells of the host in any bacterial disease. The victory rests with the party which can most successfully produce anti-bodies toward the other.

Time forbids me to discuss any of the interesting questions that remain. Among the most enticing of these are the parallelism between bacterial toxins and certain vegetable poisons as well as snake-venom; the relations of heredity to immunity; and, above all, the bearing of the facts of immunity on the doctrine of natural selection.

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 Various Papers in Journal of Pathology and Bacteriology and other periodicals for the past few years.

ORDINANCE AGAINST EXPECTORATION.

THE Philadelphia Councils have passed, and the Mayor has signed, an ordinance declaring expectoration on the sidewalks, in public conveyances, and in other places resorted to by the public, a nuisance and prejudicial to health, the offender or offenders being liable to a fine of one dollar and costs for each violation.—*Medical Record*, N.Y., March 28, 1903.

CLEANING SICK-ROOMS.

THE Department of Health of Chicago advocates the vacuum method of cleaning sick-rooms, saying that "consumption, pneumonia, influenza, scarlet fever, and similar diseases are known to be spread by infected dust of the sick-room, so the distinct and recognised purpose of the operation shall be to remove, and not simply to stir up, the ever-gathering dust."—*Medical News*, N.Y., March 28, 1903.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

An Atlas of Illustrations of Clinical Medicine, Surgery and Pathology. Compiled for the New Sydenham Society. (A continuation of the Atlas of Pathology.) Fasciculus XV. (Double Number) or III. and IV. of New Series. Xanthelasma and Xanthoma, with especial reference to their association with Functional and Organic Diseases of the Liver. Plates A. to M. and XCII. to XCVII. Compiled by JONATHAN HUTCHINSON, F.R.C.S., F.R.S., I.L.D. London: The New Sydenham Society. 1902. Folio.

THE present instalment of this new venture of the New Sydenham Society really consists of a masterly monograph, by the never weary Honorary Secretary, Mr. Jonathan Hutchinson, on Xanthelasma and Xanthoma. The author reserves the former term, originally devised by Erasmus Wilson, as a designation for the wash-leather, or chamois-leather, patches on the eyelids, to which alone it was in the first instance applied, and which differ materially from all the other types of the disease, and are but seldom present with them. He accepts the term xanthoma to designate those other types, inasmuch as some relationship with neoplasms must be admitted, and because this new name has already come into general use.

Mr. Hutchinson observes that the present Fasciculus might have been appropriately entitled—"On Disorders of the Liver Functions, as illustrated by the Affections of the Skin known as Xanthelasma and Xanthoma." The conditions grouped together under these names by no means belong to the special domain of the dermatologist, but are symptoms for the most part of liver-disease, organic or functional, and so are of the utmost interest to the general physician.

The conspicuous feature of all forms of xanthoma is the accumulation in the meshes of the corium of a fatty material, which is usually stained yellow—probably by bile-pigment.

There is, further, in varying degrees in different cases, some overgrowth of the cell structures of the affected part, leading to fibroid hypertrophy, or—shall we preferably say?—hyperplasia.

If carefully studied also, cases of this affection afford valuable insight into the laws of self-infection, of tumour growth, and of the hereditary transmission of germ-material.

Such, briefly, is the case which Mr. Hutchinson makes for the study of xanthoma, and how well he has worked it up and proved it to the hilt, reference to his monograph will prove.

The present Fasciculus does not conclude the subject. Mr. Hutchinson tells us that a number of other illustrations are in the artist's hands and will appear in a future issue. Meanwhile we are given an instalment of rich material in six coloured and thirteen uncoloured plates, while the letterpress deals with preliminary observations (from which we have drawn largely in this notice), the possible alliances of xanthoma with lichen planus, psoriasis and urticaria; descriptions of drawings and models, the mutual relationships of the several forms of xanthelasma and xanthoma, case-narratives in illustration of xanthoma palpebrarum, and of the nervous, bilious, and other phenomena which often precede it; cases occurring in children; case-narratives illustrating xanthoma occurring as a general eruption, and often attended by diabetes; and cases in association with general jaundice.

Pending the issue of a further group of illustrations, we understand that the Society's Council will feel indebted to any who may be able to supply either drawings or case-narratives which bear upon the topic of Xanthelasma and Xanthoma.

Diseases of the Skin. By H. RADCLIFFE CROCKER, M.D.
Third Edition. Two Vols. H. K. Lewis. 1903.

DR. CROCKER's reputation as a skilled dermatologist is so high, and his book has already attained such a wide and well-deserved recognition, that there is little need to do more than remind our readers of the appearance of this, the third edition.

It now assumes the form of two volumes, with a total of nearly 1,400 pages, and is enriched by four plates and 112 illustrations.

Plates I. and II. (coloured) depict syphilides, but are not, in our opinion, as good as they might be. Plates III. and IV. represent the fungi of ringworm in the light of modern researches.

Since the second edition has been out of print, for the last three years, much labour has necessarily been expended in bringing the work up-to-date. Many of the articles have been entirely re-written, and all have been thoroughly revised, and often in great part re-cast. The result of all this is eminently satisfactory, and the practitioner who purchases Crocker's work could not possess a more thorough or more practical manual of Diseases of the Skin.

The list of new articles is a long one, and we need give only a few examples to show the watchful care and diligent research of the author. For example, acrodermatitis, X-ray dermatitis, toxin serum eruptions, bronzing of the skin in diabetes, porokeratosis, lupus marginatus, granuloma, endothelioma capitis, veldt sore, blastomycosis, &c., &c.

We can most heartily commend to our readers these volumes, which accurately mirror the present aspect of dermatology, and give full and sensible directions for treatment.

Diseases of Women : a Clinical Guide to their Diagnosis and Treatment. By GEORGE ERNEST HERMAN, M.B. Lond., F.R.C.P.; Obstetric Physician to, and Lecturer on Midwifery at, the London Hospital; Examiner in Midwifery to the University of Cambridge and the Royal College of Physicians. New and Revised Edition. Pp. xvi. and 884. With upwards of 250 Illustrations. Demy 8vo. Cloth. London: Cassell & Co. 1903.

We congratulate Dr. Herman on the appearance of a new and revised edition of his valuable text-book. From the short time that has elapsed since the publication of the first edition, it is evident that the writer has found his readers, and that the readers approve. For ourselves, we consider that the work has been heavily handicapped by its arrange

ment, and that the fact that it has succeeded shows more than anything the excellence of the teaching it contains. This makes us the more inclined to quarrel with Dr. Herman. Why should a good book be handicapped by a preposterous arrangement of subject-matter? Can anyone conceive a similar work on any other specialty, or on general medicine or surgery? What would be thought of a work on the Practice of Medicine which solemnly discussed a would-be science under the heads of symptoms—a chapter on cough, another on jaundice, another on ascites, another on diarrhœa, and so on? Such a book would be laughed out of the market, and very rightly. Why then should Gynæcology be treated in such a manner? A manner that was very proper in the days when there was no knowledge of pathology and when the examination of the patient consisted in a surreptitious peep down a speculum—but a manner which is inappropriate when used to convey the results of the experience and learning of a man of the type of Dr. Herman. The writer does not attempt to conceal the fact that he expects hostile criticism, and his excuse is that patients do not come labelled “Disease of the uterus,” or “Disease of the ovary,” but complaining of symptoms. The answer, we think, is another question. How many patients suffering from gynæcological disease complain of symptoms on which a diagnosis can be based? There are a peal of general symptoms in gynæcological diseases on which each patient rings a particular change, but any one change will rarely be found to correspond to the same pathological condition in any half-dozen patients. Dr. Herman has, however, adopted his arrangement, and we suppose there is nothing to be gained by criticising it.

There are other points in his book which we cannot criticise favourably. A number of curious pessaries, which are described, and whose use as sanctioned in prolapse of the uterus, are not, in our opinion, to be recommended to the general practitioner. Dr. Herman may be able to use them himself, and to make his patients use them in such a manner that they will not harm themselves; but in the hands of the general practitioner they are far from safe. We allude particularly to Zwanke's pessary and the various forms of cup and stem pessaries. Dr. Herman still maintains the existence of

a vaginal secretion, but safeguards himself by an incorrect use of terms—"The vaginal secretion is a transudation of albuminous fluid with shedding of the superficial layers of its epithelium." If such a fluid is a secretion we fancy that no one will deny that there is a vaginal secretion. But does a transudation from the blood vessels mixed with desquamated epithelium constitute a "secretion?"

We are glad to see that the writer unhesitatingly condemns amputation of the cervix in cases of cervical cancer; but we regret that he has the true English suspicion of the efficacy of diagnosis by the microscope. Dr. Herman also very wisely considers that Doyen's operation is the best method of performing hysterectomy, but he still recommends the use of Spencer Wells' trochar in ovariectomy.

Dr. Herman's work is full of most useful and practical information, the result of ripe experience, and what it recommends is reliable and proper. It will be found of the greatest use to general practitioners and others, and will help them—if anything can—to interpret the dismal iteration of feminine symptoms.

A Practical Handbook of Midwifery. By FRANCIS W. NICHOL HAULTAIN, M.D., F.R.C.P.E.; Lecturer on Midwifery, Edinburgh School of Medicine; Obstetrician, Royal Public Dispensary, Edinburgh. Second Edition. Entirely revised and illustrated. Pp. viii. and 253. Small 8vo. London: The Scientific Press, Ltd. 1903.

A SECOND edition of Dr. Haultain's useful little work has just appeared. It does not pretend to be anything more than an epitome of the important facts connected with the practice of obstetrics put as shortly as possible. They are, however, so clearly and fully placed before the reader that its value as a work of ready reference for the student or practitioner is considerable. The information it contains is most reliable in character, and quite up-to-date in all particulars. We note, however, that, in speaking of the treatment of accidental hæmorrhage, Dr. Haultain states that plugging the vagina has been recommended in the case of an actively *contracting*

uterus, and by this we assume he means in the case of a uterus which is in labour. This, however, is not quite correct.

The Dublin School is in the main responsible for the introduction of this mode of treatment, and the statistics of the Rotunda Hospital show that the results it yields are comparable with those of Braxton Hicks' method of treating placenta prævia. It has, however, been recommended and practised there, not in cases in which the patient is in labour—rupture of the membranes is the treatment adopted in such cases—but in all cases in which the patient is not in labour and in which the hæmorrhage is *external*. It is not recommended in internal hæmorrhage.

We can strongly recommend Dr. Haultain's little book as a work of ready reference. It is, perhaps, a pity that it is not more fully illustrated.

Thirtieth Annual Report of the Local Government Board, 1900-01. Supplement in continuation of the Report of the Medical Officer for 1900-01. On Lead Poisoning and Water Supplies. London: Eyre & Spottiswoode. 1903. - 8vo. Pp. xi. + 224.

VERY important and most valuable information is contained in Dr. Houston's report on moorland waters in regard to their action on lead, which occupies almost the whole of this volume.

In his introduction to the Report, Dr. W. H. Power, Medical Officer to the Local Government Board, calls attention to his own interim report on "Lead Poisoning referred to Public Water Supplies derived from Moorland Sources," published in 1895 in the Twenty-third Annual Report of the Local Government Board. Sundry inquiries made by the Board's Medical Department into the prevalence of lead poisoning attributable to water supplies were mentioned in that Report, and Dr. Power draws particular attention to reports by the late Dr. Barry and by the late Dr. T. W. Thompson, appearing in the same volume, which showed that such poisoning was known to have occurred at one time or another among a large population inhabiting various sanitary areas in the North of England, all of which are served by public water supplies

of moorland origin. In investigating the causes which produced this dangerous property in a water supply, it had been found that much uncertainty existed with regard to the conditions which increased or diminished the liability of a given moorland water to act on lead pipes, and as to the factors governing the difference between soft moorland waters which are, and others which are not, capable of dissolving lead.

The inquiry finally decided upon to clear up the matter was entrusted to Dr. Alex. Cruikshank Houston. He has carried on researches through several years, and has finally classified and reviewed the very large mass of experimental data now available on the subject. The results of his labours are embodied, as we have said, in the present Supplement to the Thirtieth Annual Report of the Local Government Board.

The following "Summary and Conclusions" are so important that we make no apology for reprinting them at length from Dr. Houston's Report.

Our readers will observe that two expressions are used which, perhaps, need explanation—"erosive ability" and "plumbo-solvency." By the former is to be understood a quality of acting upon lead possessed by some waters. Erosion of lead may be roughly compared to the rusting of iron. When lead is exposed to the action of water possessing the property in question, its surface disintegrates, and scales of lead, in relatively insoluble form, are separated, leaving a new surface ready for further erosion. This is shown chiefly in the case of bright lead, and bears no relation to the acidity of the water. "Plumbo-solvency," on the contrary, is the ability of a water to dissolve lead. The factor essential to the possession by a water of plumbo-solvent properties is acidity, and the degree of acidity and of corresponding plumbo-solvent potency is determined by the presence of peat on the gathering area, and by the conditions under which the drainage of the peat gains access to the water supply.

And now for Dr. Houston's summary and conclusions. He finds that:—

"1. The history of epidemics of lead poisoning due to water supply, at all events in the North of England, clearly shows that

the towns which have suffered in the past derived their water supply from moorland sources. In some cases we know that the water was acid, and in others there was every reason to infer that the water was in a similar condition, since the physical circumstances of the gathering ground were the same. For example : Sheffield has a ' high ' and a ' low level ' supply ; lead poisoning occurred chiefly, if not entirely, amongst the consumers of the ' high-level ' supply. This water was proved to be acid, whereas the ' low-level ' supply was found to be neutral. The high-level water was treated with lime which neutralised the acidity, and lead poisoning was no longer observed. Both supplies were derived from upland gathering grounds, but the ' high-level ' supply was rich in acid peaty water, and contained very little spring water, whereas the ' low-level ' supply contained a much larger proportion of neutral spring water and very little peaty water. Similarly Mossley suffered from lead poisoning in 1893. Dr. Copeman in his report to the Board showed conclusively that lead poisoning was prevalent only in those districts supplied with acid water from Lower Swineshaw reservoir, and that when the neutral water from Brushes reservoir and from the Greenfield Valley (springs) was supplied to the inhabitants there was no lead poisoning. Mossley was kept under observation for a considerable period. Not only was the water in Lower Swineshaw reservoir found to be acid, but the water as delivered to Mossley was also found to be habitually acid and possessed of plumbo-solvent ability. In December, 1894, ' treatment ' of the water was commenced, lime being added to the water in Lower Swineshaw reservoir. Gradually the effect of the ' treatment ' showed itself in Mossley, and eventually the water became practically neutral and free from plumbo-solvency. Coincident with this change in the quality of the water lead poisoning was no longer complained of. On September 25, 1895, a visit was paid to Mossley, and the water in Lower Swineshaw reservoir tested. It was found to be practically neutral and free from plumbo-solvent ability.

" 2. Moorland gathering grounds are usually rich in peat. The amount of peat varies greatly on different gathering grounds, both superficially and in depth.

" 3. Moist peat has been found to be invariably acid in reaction.

" 4. The water draining from peat is always acid. The amount of acidity depends chiefly on the amount of peat and the length of time the water has been in contact with it.

" 5. Acid peaty water dissolves lead.

" 6. The degree of plumbo-solvency of a water is chiefly governed by the amount of its acidity.

" 7. Moorland spring water is neutral and often possessed of slight acid-neutralising ability. In virtue of this property, spring water is commonly capable of neutralising a certain proportion of acid peaty water.

" 8. Neutral water does not dissolve lead to any appreciable extent.

" 9. Moorland waters, as received into storage or service reservoirs, usually contain a mixture in variable amount of acid peaty water and neutral spring water. The reaction of the 'mixed' water at any given time is determined by the relative amount of peaty water, and the degree of its acidity on the one hand, and by the relative amount of spring water and the degree of its acid neutralising ability on the other.

" 10. Rain water is usually neutral, but on some gathering grounds it is slightly acid. Such acidity, however, is quite insufficient to account for the acidity of moorland waters.

" 11. Water draining from rock rich in iron pyrites may be acid and act on lead. This, however, is seemingly not a common cause of acidity of moorland waters.

" 12. During dry weather, and especially at the end of a period of dry weather, the water in moorland streams is almost invariably neutral and free from plumbo-solvent ability.

" 13. During dry weather the water in moorland streams consists chiefly of spring water; during wet weather the water is chiefly surface water draining from peaty soil.

" 14. During storms the water in moorland streams is usually very acid, and acts strongly on lead. Especially is this the case when the wet weather succeeds a period of drought, as then the streams contain the 'first washings' of the peat.

" 15. On most moorland gathering grounds there are areas (particularly on the higher and flatter portions of the gathering grounds) where the rain stagnates in peaty, boggy, and marshy places. Such water has always been found to be acid in reaction.

" 16. On many gathering grounds a layer of impervious marl underlies the beds of peat. This prevents the escape of rain in a downward direction, and so the water is 'held' in the peat or escapes only by slow lateral percolation. Thus, the peat is always moist, and each successive rainfall washes out of the peat substances formed during the more or less prolonged contact

of the water with the peat, rendering the water considerably acid.

" 17. The 'dry weather flow' on most moorland gathering grounds is very small, and is usually quite inadequate to meet the requirements of the town or towns supplied with water.

" 18. In such cases, during a period of drought, the water in the compounding reservoirs sinks rapidly to a very low level.

" 19. When heavy rain comes after drought millions of gallons of acid peaty water are frequently allowed to enter the waterworks. Indeed, the storage reservoirs are constructed for this very purpose—namely, to store for future consumption a vast bulk of 'storm' water, the ordinary flow of the streams being far too small to keep the reservoirs at their proper level.

" 20. Thus, it not unfrequently happens that, during dry weather, a reservoir water is strongly acid, while all, or nearly all, the 'inlet' streams contain neutral water. In storm time, however, these streams contain not only acid water, but the water in them is usually more acid than the reservoir water itself.

" 21. Although large quantities of peat are frequently washed into reservoirs, and although the bed of some reservoirs is largely composed of peat, the acidity of the water in moorland reservoirs is not to be traced, or only in small measure, to this circumstance, but to the ingress of large quantities of acid water during storms. No doubt, however, the peat mechanically washed into the reservoirs, and the peat in the bed of the reservoirs assists in 'keeping' the water acid. Laboratory experiments seem to prove that an acid peaty water stored out of contact with peat does not increase in acidity, but tends to lose some of its original acidity.

" 22. While the cause of plumbo-solvency is to be traced to the presence of acid in the water, and the source of the acid to contact with peat, the antecedent cause of the acidity of moorland waters seems to be associated, at all events in part, with the presence of acid-producing bacteria in the peat itself.

" 23. Certain microbes isolated from peat possess the power of rendering by their growth a sterile neutral decoction *made solely from peat*, both acid and possessed of plumbo-solvency.

" 24. Acid peaty waters have the power of dissolving not only *bright lead*, but old coated lead, and the action is a very rapid one.

" 25. Neutral waters do not dissolve lead to any appreciable extent, but they sometimes act on *bright lead* by eating away

the surface of the metal in the presence of dissolved oxygen ('erosion').

" 26. The power of 'eroding' lead is an inherent property of water containing dissolved oxygen. All waters do not 'erode' lead because most of them contain substances which coat the bright surface of the metal, and so prevent any further action taking place.

" 27. Some moorland waters are not only acid and possessed of plumbo-solvent ability, but 'erode' lead as well. But in the absence of associated acidity and plumbo-solvency, ability to erode lead appears to be of secondary importance. Erosive ability, *per se*, is not to be regarded as an intrinsically dangerous quality of a water unless under special conditions and in the presence of bright lead.

" 28. Risk of a water acquiring plumbo-solvent ability may be guarded against by methods designed to exclude from the supply contributory waters, which experience has shown to be conspicuously and uniformly acid, and also by mechanical contrivances to prevent access to the supply of the 'first washings' of peaty soil after periods of drought.

" 29. Plumbo-solvent ability, which has been acquired by a water about to be sent to consumption, may be removed by suitable arrangements for neutralisation. It is of advantage to combine such arrangements for neutralisation with sand filtration.

" 30. I would urge, as a practical outcome of this inquiry, that the circumstances of every supply of moorland origin should be considered with reference to the factors of plumbo-solvency which exist upon it; and in this Report I have endeavoured to make clear the nature of these factors and their relative importance. It is advisable in the case of existing works to test, not only in the reservoirs and main streams, but also in the tributary streams and subsidiary 'feeders' during different seasons of the year, and under ordinary and extraordinary conditions of the rainfall, in order to arrive at a satisfactory conclusion as to the liability of the supply in general, and of its constituent waters, to acquire plumbo-solvent ability. Study of this sort affords the most satisfactory means of determining how best to apply the remedy, or combination of remedies, needed in the particular instance. In the case of proposed new waterworks, this inquiry indicates the necessity of a careful survey of the physical characters of the gathering grounds, as well as of ascertaining the proportion of spring water to surface water at different times of the year and

under different conditions of rainfall, and of testing the quality of the spring water and its power of neutralising acid, and the quality of the surface water, especially during wet weather and sudden storms following a period of drought."

A Manual of Family Medicine and Hygiene for India. By SIR WILLIAM MOORE, K.C.I.E.; Honorary Physician to H.M. the Queen; formerly Surgeon-General with the Government of Bombay. Published under the authority of the Government of India. Seventh Edition. Revised by MAJOR J. H. TULL WALSH, I.M.S., F.L.S. London: J. & A. Churchill. 1903. 8vo. Pp. xii and 680.

THIS volume represents the phenomenal success of an essay for the composition of which a Government (competition) reward was conferred upon the author in 1873; and, accordingly, the seventh edition is separated from the first by an interval of less than quite thirty years. Throughout none of the successive stages of its very popular career has this volume ever been proposed to the public by its author as intended for educational, or even quite technical, purposes. His own summary of the functions which he intended it to fulfil is indeed the most concise and justly appreciative account of the volume that can well be offered: "It is not intended to take the place of medical assistance and advice; but it is offered as a substitute when such aid is not obtainable, and *as the method by which improper treatment may be avoided.*"

Although the arrangement of the contents is mainly as in the preceding editions, some changes have been made in the matter; and a good deal in the general "get-up" of the volume itself. The size of the page has been increased, and the thickness of the book thereby diminished; so that the appearance is more graceful, and the manipulation more enjoyable to the reader. The *Addendum*—with its *recipes* for the diet of the invalid—has been placed in the body of the book, at the end of Chapter VII. A small amount of matter has been omitted, in accordance with recent advances in our knowledge of tropical pathology. The editor has also introduced changes in phraseology, and uses new scientific terms, for the same reason. In this way, a large number of additions

and alterations—major and minor—have been brought into the text in the present issue ; for the purpose of bringing the volume up-to-date in the various departments of causation, symptoms, and treatment. And in its present form we can say with confidence that the volume thoroughly deserves a continuation of the popular favour with which its predecessors have been treated.

"First Aid" to the Injured and Sick. An Advanced Ambulance Handbook. By F. J. WARWICK, B.A., M.B. Cantab., M.R.C.S., L.S.A.; Associate of King's College. London; Captain, Royal Army Medical Corps (Vol.s), London Companies; Late Lecturer on Ambulance to the School Board for London; Honorary Life Member, Late Lecturer and Examiner of the St. John Ambulance Association, and Honorary Divisional Surgeon, St. John Ambulance Brigade. And A. C. TUNSTALL, M.D., F.R.C.S. Ed.; Captain Commanding the Fourth or City of London Volunteer Infantry Brigade, Bearer Company; Honorary Associate of the Order of St. John of Jerusalem in England; Honorary Life Member, Lecturer and Examiner of the St. John Ambulance Association; Honorary Divisional Surgeon of the St. John Ambulance Brigade; Surgeon to the French Hospital and to the Children's Home Hospital. Third and Revised Edition. 12th Thousand. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1903.

THE rapid success of this extremely instructive little volume is the most conclusive proof that its publication was at once felt to supply a distinct want in what may be called popular professional literature. The second edition was called for with such eagerness that no time was available for even small alterations in printing. In this third issue the authors have carefully revised the text, and have availed themselves of some of the suggestions made by friendly critics and advisers since the first publication. Many of the illustrations contained in the former editions have been considerably improved in the present, and a large number of others have been added.

In its present form, this extremely handy and tastefully-

bound little volume is a most excellent guide-book to its subject. We feel sure that its popularity will be fully maintained, and we need wish it nothing better.

Diseases of the Organs of Respiration: a Treatise on the Etiology, Pathology, Symptoms, Diagnosis, Prognosis and Treatment of Diseases of the Lungs and Air Passages. By SAMUEL WEST, M.D., F.R.C.P.; Assistant Physician and Lecturer on the Principles and Practice of Medicine at St. Bartholomew's Hospital; Senior Physician, Royal Free Hospital; &c. In Two Volumes. With numerous Diagrams and Illustrations. London: C. Griffin & Co. 1902. Pp. 398 and 514.

WE congratulate Dr. West on the publication of this important and valuable work. For the amount of research of which it gives evidence, and for the wealth of information which it contains, we believe it to be unequalled by any of the books on the subject produced by British physicians for many years past. Dr. West has had much experience as physician to two general hospitals and to a special chest hospital, and much of the book is based on his own observations. On some subjects his views differ from those usually accepted; and, while stating the views of others fully, yet he does not hesitate to show clearly what he has himself come to believe. One feature of the work which has impressed us is the amount of statistical information as to the frequency of diseases, symptoms, &c., which appears on almost every page.

The book is a very valuable one, and can be warmly commended to all physicians.

Reports of the Society for the Study of Disease in Children. Vol. II. Session 1901-1902. Edited by GEORGE CARPENTER, M.D. London: J. & A. Churchill.

THIS second volume of these interesting Transactions contains many reports of value. The Society was founded two years ago, and has done some admirable work. The cases are, on the whole, better reported than last year. They are eminently practical, and mostly consist of short demonstrations of cases exhibited,

which are most instructive. Amongst the most interesting are "Arsenical Neuritis," "Double Facial Palsy," "Tubercular Meningitis," "Adenoids," "Dilatation of Colon," "Scurvy," and "Heart Disease in Children." We are surprised, however, to find that many of the highest British authorities on Diseases of Children, notably many members of the staffs of London Hospitals, have not been enrolled as members. Being a London Society, this is remarkable. The Society is deserving of support, and these Transactions are distinctly interesting.

A System of Physiologic Therapeutics: a Practical Exposition of the Methods, other than Drug-giving, useful in the Prevention of Disease and in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D.; Senior Assistant Professor of Clinical Medicine in Jefferson Medical College; Physician to the Jefferson Medical College Hospital, and to the Philadelphia, Jewish, and Rush Hospitals; one time Professor of Medicine and Therapeutics in the Philadelphia Polyclinic, &c. Volume V. Prophylaxis—Personal Hygiene—Civic Hygiene—Care of the Sick. By JOSEPH M'FARLAND, M.D., Professor of Pathology, Medico-Chirurgical College, Philadelphia; HENRY LEFFMAN, M.D., Professor of Chemistry in the Woman's Medical College, Philadelphia; ALBERT ABRAMS, A.M., M.D. (University of Heidelberg), formerly Professor of Pathology, Cooper Medical College, San Francisco; and W. WAYNE BABCOCK, M.D., Lecturer on Pathology and Bacteriology, Medico-Chirurgical College, Philadelphia. Illustrated. London: Rebman, Ltd. 8vo. Pp. 539.

As we are told in the preface, this volume is meant to "contain an epitome of what is essentially the Natural History of Medicine; including the important facts, thus far learned, regarding the origin, dissemination, and prevention of disease." The scheme is as lofty as well as a comprehensive one; and we must congratulate the various contributors on the ability and judgment, as well as the exceptional scientific and literary attainments, which they have brought to bear on the completion of their several portions of this mighty undertaking. We must also take the opportunity of congratulating the

editor on the skill which he has displayed in uniting the various sections into one great and harmoniously constructed monument of scientific architecture. Every one of the sections is dealt with in a thoroughly philosophical, and judiciously critical, spirit; and the most painstaking endeavour must have throughout been expended in the selection and sifting of every important item of information from the vast mass of material which had to be utilised in each individual case. And a corresponding degree of exceptionally marked constructive skill has in each instance been brought to bear on the concluding efforts of uniting and welding all the selected materials into a single homogeneous and harmonious scientific structure. The fullest up-to-date information and advice on the manifold questions which are involved in each subject dealt with are here made available, and presented in the clearest light, and by the most instructive methods. The complicated problems of economics, of engineering, of manufacturing, of architecture, of pædagogics, of commercial intercourse, of taxation, of municipal government, which are continuously arising in connection with the causation and prevention of disease, are fully discussed; also, the collateral considerations involved in the subjects of epidemiology, of parasitology, and of entomology. The all-important subject—for the patient and his other friends—of the care of the sick room is dealt with in a way which we cannot recollect having found equalled in any other treatise in the English—or, indeed, in any other—language. We are told that “the editor takes a special pleasure in this volume.” We could have easily guessed that without being told. His share in the work has evidently been a labour of love; and we will add that the results obtained give him reasonable grounds for the development of a degree of pride corresponding to his pleasure. As the volume now lies before us, we look upon it as a priceless mine of information, embodying in the most lucid and attractive form every well-established item of information on the general subjects of the nature, causation, distribution, and prevention of disease.

After having said so much, we do not think it necessary to enter into detailed criticism; we will merely close this cursory notice by recommending every one of our readers to procure the volume for himself, and then let him read, mark, learn, and inwardly digest the contents.

PART III.

SPECIAL REPORTS.

RHINOLOGY AND LARYNGOLOGY.

By S. HORACE LAW, M.D. Univ. Dubl., F.R.C.S.I.; Throat Surgeon to the Adelaide Hospital, and Surgeon to the Dublin Throat and Ear Hospital.

"CHORDITIS CANTORUM."

THE *Laryngoscope* for November, 1902, contains a very interesting article by F. E. Miller, M.D., of New York, which places the subject of singers' nodes in quite a new light. He commences his article with a quotation from a previous paper on "Observations of Voice and Voice Culture," where he said: "The action of the pharyngeal and nasal cavities, or hollow spaces, is prior and anterior to the action of the vocal bands, for the rest of the voice, showing that we need for tone and overtone production, quality, pitch and amplification—something more than mere action of the vocal cords in order to produce tone properly." He then mentioned the case of a singer who was not able to retain pitch, and had a break at F sharp, and whose voice after attempts at phonation broke, forming a node between the anterior third and thyroid end of the vocal cartilage, which proved to him that a blow struck on the side of the larynx, and injuring one of the exterior or extrinsic muscles of attachment, is capable of producing a certain and specific injury at a point on the cord within. This fact completely overrules the contention of the authorities who maintain that a node cannot be formed at a point further up in the cord than the anterior third.

He then directed attention to the three hollow spaces—nasal, oral and laryngeal—which, he said, had much to do with the modification and modulation of the voice; and to illustrate this he had prepared a glass vessel with three spaces nearly corresponding to those spaces mentioned above.

He then compared the vocal mechanism to a violin, and showed that these hollow spaces are to the vocal bands what

the violin is to the strings, adding that the vibrations of the air, not the cords, are what is commonly called the "tone." Anatomically he showed that the muscles are so arranged that they are attached to the base of the skull and thence on downwards to the sternum, and thus are capable of steadying and lifting or moving the various parts of the vocal apparatus. Also he showed that the cricoid cartilage lies closely applied to the 5th cervical vertebra, and thus bone conduction is secured for the better diffusion of the sounds produced. The tongue also is alone sufficient to completely destroy tone by derangement of its movements, though when well adjusted it gives what is termed the silvery quality to the voice. He then proceeded to show that many of the movements used in vocalisation are capable of voluntary control, and that thus mistakes in use may be corrected. The key also to efficient results seems to lie in the regulation of the hollow spaces by the control of their boundaries, so that with the establishment of correct relationship of parts, and the use of proper breath supply, the need for voluntary control ceases. He also asserts that the thyroid cartilage moves on the cricoid, and not *vice versa* as, is often maintained.

After a long and interesting anatomical discussion, he turns to the treatment and deprecates operative interference, as when only inflammatory tissue is present this will be absorbed if the cause of the irritation is removed, and this he brings about by exercises and proper and vigorous massage to the strained parts, which is easily carried out, if his theory that the cause of these singers' nodes is to be found in the disturbance of the function of the extrinsic muscles be true. He also brought forward cases to prove that cure may be expected with this line of treatment. For a proper appreciation of the article it should be read in the original.

EXFOLIATION OF THE ADULT LABYRINTH.

In the "Transactions of the American Otological Society," Vol. VIII., Part I., 1902, Dr. B. A. Randall relates a case of "Trauma in Relation to Exfoliation of the Adult Labyrinth." The case was briefly as follows:—A big, strong man of fifty-five was injured in a railway accident, becoming unconscious, and was found to be suffering from an abrasion in the temporal

region, which was exquisitely tender. He afterwards complained of dizziness, but no deafness was reported. After some months his mastoid was opened, and again a second time later on, but both times only superficially.

Finally a large white sequestrum was removed, and subsequently some more dead bone; the sequestrum consisted of the greater part of the vestibule and semi-circular canals. He says: "Examination of the sequestrum, however, showed almost no sign of carious surfaces, and while stony hard, it was rounded like a pebble from the brook by the long-continued action of granulation tissue. This made plausible the view that a fissure of the petrous portion of the temporal bone anterior to the auditory apparatus had furnished an entrance point for the deeper penetration of the suppurative process, and had facilitated the separation of the labyrinthine sequestrum." He then gives several other cases and quotes Alt in Blau's "Encyclopædia of Otology," where he says: "The necrosis affects most frequently the inner structure of the cochlea with involvement of the whole or a major part of the first turn. There is special disposition to the affection in the first decade of life. The duration of the causative otorrhœa is from many months to twenty years. As symptoms of labyrinthine necrosis or exfoliation we may consider severe, long-standing pain in ear and head robbing the patient of sleep for years or months, profuse malodorous otorrhœa, polypoid growths quickly recurring after removal, facial palsy (in 80 %), deafness, and frequent—but by no means constant—vertigo, disturbances of equilibrium, vomiting and subjective noises." He also gives a very complete list of all the published cases.

THE RECURRENCE OF HYPERTROPHY IN ADENOID VEGETATIONS.

In the 12th volume, 1902, of the *Archiv. für Laryngologie*, Dr. Max Gorke has written an article on the above subject, in which he says that the attention of practitioners must be directed to an occurrence which throws doubt on the success of the operative removal of adenoids—namely, their tendency to recur in a certain proportion of the cases. He remarks that the statistics bearing on this subject vary very much, but that all agree that the condition never returns with the

same severity as previously. He considers that the causes of this recurrence are partly local and partly general or constitutional, and lays stress on the fact that such things as lympho-sarcoma, tuberculosis, and pseudo-leukæmia are at any rate possibilities. He also says that this condition may arise in otherwise healthy children, and that it cannot always be laid at the door of the operator, who may be said not to have done a complete removal, as recurrence has been noticed in some cases where the removal took place under the control of the eye by means of a mirror. An interesting point is also mentioned—namely, that the histological appearances of a piece of a recurrent adenoid tissue show a completely different structure, as the layers are no longer regular, but are mixed up and cannot be divided one from the other.

PACHYDERMIA AND CARCINOMA LARYNGIS.

Professor B. Fränkel, of Berlin, contributes a very instructive article to the *Archiv. für Laryngologie*, Band 13, 1902, in which he describes a case of a patient of his who first came to him with what was considered to be a simple pachydermia of the larynx. This was in March, 1897. He was again seen in July of the same year and a considerable alteration was noticed, so a piece was removed and showed a condition closely simulating carcinoma; it was decided to remove the disease, and it was done endo-laryngeally. Several more operations were performed and fissure of the larynx became necessary in order to remove all the disease. The last operative procedure was undertaken on March 13th, 1898, and then only granulation tissue was found. He was seen in 1902 and found to be perfectly well.

The vocal cord removed was cut in series, so that the transition from pachydermia to what was true cancer was well seen, and the drawings accompanying the article show this very perfectly. One can follow the outline of the basement membrane through the earlier sections and see the epithelium getting thicker and thicker, till finally one loses the dividing line, and the epithelium is found amongst the connective tissue. The interest of this case lies principally in the fact that it commenced as a pachydermia (which does not necessarily go on to carcinoma), and was seen during that stage,

before it was a definite tumour, and was watched in its development; also in the fact that no recurrence took place during the subsequent four and a half years—that is, up to date; and finally in the very complete microscopic examination which produced such a wonderful series of sections.

A second case of a similar nature is also mentioned, and in it up to the time of the patient's death in 1902, from intestinal carcinoma, no recurrence in the larynx had taken place.

THE PRESENT POSITION OF THE OZÆNA QUESTION.

In the 13th volume, 1902, of the *Archiv. für Laryngologie*, Dr. L. Grünwald has written a very important article, condensing and placing in chronological order the various theories advanced with regard to this little understood disease. He commences by saying that hardly any two authorities agree as to the causation, or, indeed, as to the proper clinical division, even leaving out the question of the pathology, of this affection. First came Fränkel's description of what he laid down to be "genuine ozæna," then Gottstein described it as "formation of foetid crusts on both sides in a wide nose." At that time it was considered to be a secretion from the whole surface of the nasal mucous membrane, or at any rate a large portion of it. Then came reaction in favour of the theory that an accessory sinus was at the bottom of the mischief, and several *post-mortems* were cited as proving this contention. The next change was due to histological research, and it was stated that there was always a fatty degeneration present, and another authority stated that the glands were atrophied. Then came the difficulty of getting all these various observations into some order; obviously there could hardly be an increased secretion with diminution of glandular tissue, so this helped on the theory of accessory sinus inflammation as the fountain head of the trouble. On the other hand, there are many cases where no one could say that any accessory sinus had anything to do with it, as at *post-mortems* nothing was found in them, so that the next step was to say that there were different forms. Another authority (Hajek) found no difficulty in reconciling these apparent opposites by saying that in the later cases the accessory sinus had got well and had left behind an altered and degenerate mucous membrane, which con-

tinued to secrete matter and to form crusts. The next advance was in bacteriology, when a "*bacillus ozæna*" was described by Lowenberg, and other forms by Abel, &c. Other causes given at various times were gonorrhœal infection contracted at birth, congenital syphilis, tuberculosis, purulent rhinitis in early childhood, and the like. He then discusses the three cardinal symptoms—formation of crusts, smell and atrophy, the latter requiring to be divided into atrophy in the whole thickness and that occurring in one or more layers. He winds up his article with the following, which is a translation, but makes no attempt to say what his views on this complex subject are, further than to incline to the theory that the disease of one or more accessory sinuses is probably the correct solution :—

"Thus we see that we are almost in a position to make a fairly complete picture of the genesis of the train of symptoms belonging to the so-called ozæna, although it is not clear in every particular.

"A number of the local suppurative diseases (accessory sinuses, rhinitis and adenoids) pursue a course under the clinical picture of foetid crust-formation in an atrophic nose. The secretion is often fluid, generally without smell, though often found to be foetid in the fresh condition, dries as a result of the mechanical conditions occasioned by the abnormal width of the nasal cavities, amongst which conditions the adhesiveness due to the *Bacillus mucosus* of Abel is shown to be one of the most important.

"The atrophy, in so far as it was not primarily present, occurs as a result of the pressure and infectious influence of the large crusts.

"The smell is brought about by the saprophytic decay in moist surroundings, due to the abnormal adhesiveness of the closely applied masses of secretion. The reason why the secretion, primarily of a serous character, has more inclination to become adherent and foetid still requires elucidation.

"It is, however, certain that the general condition of body-weakness due to hereditary taint, more especially a tuberculous one, gives considerable aid in the setting up of the original suppuration and the secondary infective processes; while, on the other hand, the disease itself can lead to general cachexia, anæmia, scrofula, &c."

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF MEDICINE.

President—A. V. MACAN, M.B., Pres. R.C.P.I.
Sectional Secretary—R. TRAVERS SMITH, M.D.

Friday, March 13, 1903.

Splenic Anæmia.

AFTER giving a short review of the literature of the subject DR. GEORGE PEACOCKE related the history of a man, aged forty-five, who was admitted into the Adelaide Hospital under his care on June 8th, 1902. The general appearance suggested lymphadenoma rather than any other cause of splenic enlargement. The case was considered as possibly a splenic form of Hodgkin's disease.

[Dr. Peacocke's paper will be found at page 274.]

Severe Measles in an Adult—Second Attack.

DR. BURGESS reported a case. The symptoms were of the scarlatina type, although there was no doubt as to the diagnosis. The case was remarkable for (1) the prolonged fever chart; (2) exhibiting the sudden hyperpyrexia (106° F.); (3) the suppression of urine occurring thrice; (4) the continuous restlessness and insomnia over which no drugs exerted any influence. The patient made a perfect recovery.

[Dr. Burgess's paper will be found at page 281.]

DR. H. C. DRURY said that he agreed with the diagnosis of

measles as against scarlatina from the fact that there were well-marked symptoms, such as are met with in measles previous to the appearance of the rash on the fourth day. The unusual symptom of vomiting was probably a family peculiarity, seeing that it occurred in the patient's two children. The dark colour of the rash was usually a bad symptom, as in this case, but he lately had a child under his care who went through an ordinary uncomplicated attack of measles, but with a petechial rash all over the body. A sister of the patient was admitted under the care of a colleague with a similar attack, and also a petechial rash. This probably illustrated another form of family peculiarity.

Hallucinations.

DR. CONOLLY NORMAN read a paper. He mentioned a case of unilateral hallucination of hearing occurring in a man deaf of the same ear, and described in much detail a number of cases of psychomotor hallucination. He referred to some of the rarer forms of hallucination and briefly glanced at the theories of hallucination propounded by Tamburini and Tanzi.

The Section then adjourned.

SECTION OF OBSTETRICS.

President—W. J. SMYLY, M.D.

Sectional Secretary—T. HENRY WILSON, M.D.

Friday, March 20, 1903.

THE PRESIDENT in the Chair.

DR. TWEEDY showed an ovarian cyst, and also a parovarian cyst removed from the same patient.

DR. PUREFOY showed a pyosalpinx (salpingitis isthmica nodosa).

DR. ALFRED SMITH exhibited a Bossi dilator and described its action and use.

DR. PUREFOY and DR. CARTON gave details of cases in which they had used the instrument, and DRs. TWEEDY, DOYLE, and the PRESIDENT also spoke.

THE SECRETARY read for DR. W. P. COCKLE a paper on a case of "Eclampsia," with *post-mortem* delivery by forceps.

The Section then adjourned.

CORK MEDICAL AND SURGICAL SOCIETY.

Wednesday, March 25, 1903.

P. T. O'SULLIVAN, M.D., President, in the Chair.

Gangrenous Appendicitis.

DR. HORACE R. TOWNSEND read notes of an operation for gangrenous appendicitis in a man, aged twenty-two, and showed the patient and the diseased organ. The man had been attacked by sudden acute pain in the right iliac region, which continued for seven days before his admission to the South Infirmary. On examination a swelling could be detected in the right iliac fossa. This was dull on percussion, immovable, and very tender. The temperature was 103.2° . Two days afterwards an operation was performed. On opening the abdomen the cæcum was found inflamed and distended, and on searching for the appendix some adhesions between the cæcum and the adjacent intestine gave way, and about a pint and a half of pus welled up through the incision. With this pus the appendix was washed away, as well as a faecal concretion about the size and shape of a tooth. The appendix was found to be in a gangrenous condition. By sewing together the peritoneal surfaces of the cæcum and ileum the cavity containing the pus, which was in the walls of the cæcum, was completely cut off from the rest of the abdominal cavity. Two drainage wounds were made, and though these are still secreting slightly the patient is in excellent health.

Septicæmia.

DR. P. J. CREMEN read notes of a case of septicæmia in a girl, aged nineteen. For a long time past she had suffered from dysmenorrhœa, accompanied by severe vomiting. The uterus was found to be in a condition of retroflexion, and one Fallopian tube was enlarged. The uterus was replaced with the sound, and a Hodge's pessary was inserted. That night the patient got a rigor, and next morning her temperature was 103.2° , and continued high for two days. The menses then appeared, and the temperature fell to 102° for five days, but rose again to 103° , and the patient now suffered from abdominal pain and vomiting; her respirations were 35, and her pulse 120. Antistreptococcus

serum was then injected, and was continued in doses of 10 c.c. every four hours as long as the temperature remained above 102°. In a few days the temperature fell to 99°, but the lungs became affected with broncho-pneumonia, evidently of a septic type, and at this period the patient was in an extremely low condition. It having been found that a rectal injection of one pint of normal saline solution, to which 15 grains of quinine were added, brought about a material improvement, this was repeated on several occasions, and always with good results. A few hypodermic injections of strychnin were given at this stage, but after three doses of $\frac{1}{30}$ th grain at four hour intervals, symptoms of strychnin poisoning developed, and the drug had to be abandoned, digitalin being substituted. A number of subcutaneous abscesses appeared in the limbs later on, and had to be opened. Eventually, after all hope had been abandoned, the disease appeared to have worn itself out, and the patient made a very slow but complete recovery. In all 55 injections of serum were given.

Hæmorrhagic Endometritis.

DR. JOHN REID read notes of a case of hæmorrhagic endometritis in a woman aged thirty-eight. The bleeding was profuse, and continued for five weeks, resisting all the ordinary methods of treatment. A previous attack, three years ago, had been cured by curetting, but the patient would not consent to the operation on this occasion. Among other drugs which failed to give relief was adrenalin, administered by the mouth, but on packing the uterus with iodoform gauze, steeped in a solution of adrenalin chloride (1 in 1000), the hæmorrhage immediately ceased, and the patient did not lose another drop of blood.

REPORT OF THE ROYAL COMMISSION ON UNIVERSITY EDUCATION IN IRELAND.

IN reply to numerous enquiries as to the possible outcome of the Commission's Report, the Secretaries of the Royal University of Ireland are requested to state that nothing is yet known of the intention of the Government in this matter, and that, even if any changes are to be introduced, due regard will be had to the cases of those who have entered on their University career, and a considerable time will be allowed them within which to complete their courses under the ordinary regulations.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR JOHN MOORE, B.A., M.D. Univ. Dubl. ;

F.R.C.P.I. ; F.R. Met. Soc. ;

Diplomate in State Medicine and Ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS.

For four weeks ending Saturday, March 28, 1903.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending March 28, 1903, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 22·5 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,093,289. The deaths registered in each of the four weeks ended Saturday, March 28, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Mar. 7	Mar. 14	Mar. 21	Mar. 28			Mar. 7	Mar. 14	Mar. 21	Mar. 28	
22 Town Districts	25·4	22·9	24·2	22·5	23·8	Lisburn -	27·3	13·6	27·3	13·6	20·5
Armagh -	41·2	20·6	20·6	20·6	25·7	Londonderry	31·5	22·7	23·9	21·4	24·9
Ballymena	9·6	14·4	14·4	9·6	12·0	Lurgan -	8·9	8·9	35·4	26·6	20·0
Belfast -	23·3	22·0	20·8	20·5	21·7	Newry -	37·8	29·4	50·4	37·8	38·8
Clonmel -	30·8	15·4	0·0	30·8	19·3	Newtownards	22·9	17·2	11·4	34·3	21·5
Cork -	27·4	19·9	20·5	12·3	20·0	Portadown	31·0	0·0	41·3	0·0	18·1
Drogheda -	28·6	8·2	12·3	20·4	17·4	Queenstown	33·0	6·6	6·6	6·6	13·2
Dublin - (Reg. Area)	27·8	26·6	27·7	29·3	27·9	Sligo -	28·8	14·4	28·8	14·4	21·6
Dundalk -	4·0	19·9	27·9	4·0	14·0	Tralee -	5·3	5·3	58·1	21·1	22·5
Galway -	19·4	35·0	19·4	19·4	23·3	Waterford	25·3	25·3	25·3	19·5	23·9
Kilkenny -	19·7	29·5	4·9	9·8	16·0	Wexford -	32·7	18·7	23·3	18·7	23·4
Limerick -	20·5	30·1	28·7	16·4	23·9						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, March 28, were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in fifteen of the districts to 29·4 in Newry, the 9 deaths from all causes registered in that district including 7 from measles. Among the 141 deaths from all causes in Belfast are 3 from measles, 3 from whooping-cough, one from diphtheria, and 2 from enteric fever.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this Area is 378,994; that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, March 28, amounted to 264—137 boys and 127 girls; and the deaths to 225—117 males and 108 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 31·0 in every 1,000 of the population. Omitting the deaths (numbering 12) of persons admitted into public institutions from localities outside the Area, the rate was 29·3 per 1,000. During the twelve weeks ending with Saturday, March 28, the death-rate averaged 27·9, and was 3·0 below the mean rate for the corresponding portions of the ten years 1893–1902.

Small-pox caused one death—that of an unvaccinated child aged 5 years. Measles caused 2 deaths, scarlet fever 4, influenza one, whooping-cough 6—in the preceding 4 weeks the deaths from whooping-cough had numbered, respectively, 5, 3, 2, and 2—diphtheria 2, enteric fever 3, and *diarrhœa*, dysentery, 3 deaths.

Of the 49 deaths attributed to tuberculous disease, 2 were from tuberculous phthisis, 28 from *phthisis*, 10 from tuberculous meningitis, and 9 from other forms of the disease.

Malignant disease ("cancer") caused 6 deaths.

Diseases of the nervous system caused 18 deaths, of which 8, all children under 5 years of age, were from *convulsions*.

There were 38 deaths from diseases of the heart and blood vessels.

Diseases of the respiratory system caused 39 deaths—a number which is equal to an annual rate of 5·4 per 1,000 of the estimated population of the Dublin Registration Area. The annual average rate for the corresponding week of the previous 10 years was 7·2 per 1,000. The 39 deaths include 22 from bronchitis, 5 from broncho-pneumonia, 8 from *pneumonia*, and one from pleurisy.

Seven deaths from accidental causes were registered, of which one was caused by burns and one by drowning.

In 11 instances the cause of death was “uncertified,” there having been no medical attendant during the last illness. These cases include the deaths of 6 children under 5 years of age (including 5 infants under one year old) and the deaths of 2 persons aged 60 years and upwards.

Fifty-seven of the persons whose deaths were registered during the week were under 5 years of age (35 being infants under one year, of whom 10 were under one month old), and 60 were aged 60 years and upwards, including 31 persons aged 70 and upwards, of whom 10 were octogenarians, and 4 (females) were stated to have been aged 90, 90, 91, and 93 years, respectively.

The Registrar-General points out that the names of causes of death printed above in *italics* should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

Returns of the number of cases of infectious diseases notified under the “Infectious Diseases (Notification) Act, 1889,” as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and by Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast:—

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended March 28, 1903, and during each of the preceding three weeks.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	German Measles (Rubella)	Scarlet Fever	Typhus Fever	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Other Notifiable Diseases	Total
City of Dublin	Mar. 7	5	28	1	22	-	-	8	-	2	16	18	-	-	4	104
	Mar. 14	9	25	2	42	-	-	11	-	1	16	11	-	-	4	121
	Mar. 21	17	25	-	28	-	-	3	-	1	21	20	-	2	1	118
	Mar. 28	14	14	-	51	-	-	11	-	4	19	27	-	9	-	149
Rathmines and Rathgar Urban District	Mar. 7	-	7	-	-	-	-	-	-	-	4	-	-	-	-	11
	Mar. 14	-	4	-	3	-	-	1	-	-	-	1	-	-	-	9
	Mar. 21	-	4	-	5	-	-	-	-	1	1	-	-	-	-	10
	Mar. 28	1	9	-	13	-	-	2	-	1	1	1	-	-	-	28
Pembroke Urban District	Mar. 7	-	-	-	6	-	-	1	-	-	1	-	-	-	2	10
	Mar. 14	-	1	-	7	-	-	1	-	-	-	-	-	-	1	10
	Mar. 21	-	-	-	10	-	-	1	-	-	-	3	-	-	-	14
	Mar. 28	-	-	-	4	-	-	2	-	-	-	3	-	-	-	9
Blackrock Urban District	Mar. 7	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	Mar. 14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mar. 21	1	-	-	1	-	-	-	-	-	-	-	-	-	-	2
	Mar. 28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kingstown Urban District	Mar. 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mar. 14	-	-	-	1	-	-	-	-	-	1	-	-	-	-	2
	Mar. 21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mar. 28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
City of Belfast	Mar. 7	-	-	-	9	-	-	9	-	12	12	13	1	-	-	56
	Mar. 14	-	-	-	13	-	-	8	1	5	11	9	-	-	-	47
	Mar. 21	-	-	-	3	-	-	5	1	9	15	4	2	-	-	39
	Mar. 28	-	-	-	6	1	-	6	-	4	17	9	1	-	-	44

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ending Saturday, March 28, 1903, 16 cases of small-pox were admitted to hospital, one was discharged, there was one death, and 55 patients remained under treatment at its close. Of these 9 were convalescents at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

One case of measles was admitted to hospital, being 3 below the admissions for the preceding week; 9 cases of this disease were discharged, there was one death, and 6 cases remained under treatment at the close of the week.

Twenty-seven cases of scarlatina were admitted to hospital, 21 cases were discharged, there were 2 deaths, and 188 cases remained under treatment at the close of the week.

The only case of typhus fever remaining in hospital at the close of the previous week was discharged.

Thirteen cases of diphtheria were admitted to hospital, 5 were discharged, there were 2 deaths, and 27 cases remained under treatment at the close of the week.

Four cases of enteric fever were admitted to hospital, 3 cases were discharged, and 46 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 10 cases of pneumonia were admitted to hospital, 9 patients were discharged, and 25 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, March 28, in 76 large English towns, including London (in which the rate was 16·5), was equal to an average annual death-rate of 16·2 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 18·6 per 1,000, the rate for Glasgow being 19·8, and for Edinburgh 17·3.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of March, 1903.

Mean Height of Barometer	-	-	-	29·642 inches.
Maximal Height of Barometer (8th, at 9 a.m.)	-	-	-	30·332 „
Minimal Height of Barometer (2nd, at 3 p.m.)	-	-	-	28·600 „
Mean Dry-bulb Temperature	-	-	-	44·4°.
Mean Wet-bulb Temperature	-	-	-	41·8°.
Mean Dew-point Temperature	-	-	-	38·9°.
Mean Elastic Force (Tension) of Aqueous Vapour	-	-	-	·238 inch.
Mean Humidity	-	-	-	81·7 per cent.
Highest Temperature in Shade (on 22nd)	-	-	-	60·7°.
Lowest Temperature in Shade (on 2nd)	-	-	-	34·1°.
Lowest Temperature on Grass (Radiation) (10th)	-	-	-	30·8°.
Mean Amount of Cloud	-	-	-	58·8 per cent.
Rainfall (on 26 days)	-	-	-	3·623 inches.
Greatest Daily Rainfall (on 12th)	-	-	-	·808 inch.
General Directions of Wind	-	-	-	S.W., W., S.

Remarks.

A stormy, blustering, rainy, open month was March, 1903. Yet while the mean temperature was 2° above the average it fell 1·9° below the mean for February, 1903—a marked retrogression in warmth thus taking place notwithstanding the

advancing season. The rainfall was very frequent (on 26 out of 31 days) and often heavy, so that the total amounts to the high figure of 3·623 inches. But the stormy character of the month deserves especial notice—on no fewer than 11 days did the wind reach gale-force in Dublin, and there were “high winds” on as many as 22 days. Scarcely any Easterly wind was observed—the wind kept shifting backwards and forwards through the Westerly points of the compass. The duration of bright sunshine was estimated at 110·75 hours, compared with 94 hours in 1902, 132·5 hours in 1901, and only 84 hours in 1900. The daily average of bright sunshine was 3·57 hours, compared with 3 hours in March, 1902, 4·27 hours in 1901, and only 2·7 hours in 1900.

On Wednesday, the 25th, a wave of unusual warmth for the time of year swept across France, England, Belgium, and Germany, the thermometer rising to 81° at Biarritz, 79° in Paris, 75° at Cap Grisnez (near Boulogne), 71° in Brussels, 67° in London, and 65° at Oxford.

In Dublin the arithmetical mean temperature (45·6°) was 2·0° above the average (43·6°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 44·4°. In the thirty-eight years ending with 1902, March was coldest in 1867 and 1883 (M. T. = 39·0°), and warmest in 1893 (M. T. = 48·1°). In 1902 the M. T. was 46·7°.

The mean height of the barometer was 29·642 inches, or 0·274 inch below the corrected average value for March—namely, 29·916 inches. The mercury rose to 30·332 inches at 9 a.m. of the 8th and fell to 28·600 inches at 3 p.m. of the 2nd. The observed range of atmospheric pressure was, therefore, 1·732 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 44·4°. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × ·485), the M. T. becomes 45·4°. The arithmetical mean of the maximal and minimal readings was 45·6°, compared with a thirty years’ (1871–1900) average of 43·6°. On the 22nd the thermometer in the screen rose to 60·7°—wind, S.S.W.; on the 2nd the temperature fell to 34·1°—wind, W.S.W. The minimum on the grass was 30·8° on the 10th—wind, W.S.W.

The rainfall was 3·623 inches, distributed over 26 days. The average rainfall for March in the thirty-five years, 1866–1900, inclusive, was 1·950 inches, and the average number of rainy days was 16·0. The rainfall, therefore, and the rainy days were much above the average. In 1867 the rainfall in March was very large—

4·972 inches on 22 days. On the other hand, the smallest March rainfall was ·288 inch on 8 days in 1893. In 1900, only ·963 inch fell on 13 days. In 1902 the rainfall was 1·752 inches on 21 days.

The atmosphere was slightly foggy in the city on the 12th only. High winds were noted on as many as 22 days, reaching the force of a gale on 11 occasions—namely, the 1st, 16th, 17th, 18th, 19th, 20th, 22nd, 23rd, 28th, 29th, and 30th. Snow or sleet occurred on the 1st, 5th, 6th, and 23rd; hail also fell on the 1st, 5th, 7th, and 28th. Temperature exceeded 50° in the screen on 18 days, compared with 23 days in 1902, only 6 days in 1901, only 5 days in 1900, 19 days in 1899, 9 in 1898, 14 in 1897, 21 in 1896, 13 in 1895, and 22 in 1894. It never fell to 32° in the screen, and on the 22nd it rose to 60·7°. The minima on the grass were 32° or less on 4 nights, compared with 5 nights in 1902, 11 nights in 1901, 14 nights in 1900, 13 in 1899, 15 in 1898, 9 in 1897, 8 in 1896, 10 in 1895, and 12 each in 1894 and 1893. The thermometer once failed to reach 45° (on the 6th).

The rainfall in Dublin during the three months ending March 31st amounted to 9·126 inches on 61 days, compared with 5·114 inches on 43 days in 1902, 5·656 inches on 46 days in 1901, 6·698 inches on 63 days in 1900, only 1·650 inches on but 32 days in 1891, and a thirty-five years' (1866–1900 inclusive) average of 6·170 inches on 50·0 days.

At Knockdolian, Greystones, Co. Wicklow, 5·050 inches of rain fell on 25 days. The corresponding figures for March, 1900, are 1·320 inches of rain on 14 days, for 1901, 1·840 inches on 14 days, and for 1902, 1·660 inches on 17 days. The maximal fall in 24 hours was ·810 inch on the 12th. The total rainfall since January 1, 1903, equals 11·220 inches on 54 days, compared with 11·756 inches on 58 days in the first quarter of 1900, 7·260 inches on 41 days in the same period of 1901, and 6·110 inches on 34 days in that of 1902.

Dr. B. H. Steede, M.D., D.P.H., reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 6·186 inches on 30 days, compared with 1·417 inches on 19 days in 1902, 1·798 inches on 14 days in 1901, ·892 inch on 12 days in 1900, and 1·054 inches on 9 days in 1899. On the 12th 1·040 inches fell, and on the 14th ·761 inch. The total rainfall at this station from January 1 to March 31, inclusive, was 13·602 inches on 65 days, compared with 6·006 inches on 41 days in the first quarter

of 1902, 6·635 inches on 39 days in that of 1901, 10·631 inches on 57 days in that of 1900, 9·929 inches on 48 days in that of 1899, 4·767 inches on 40 days in that of 1898, and 10·086 inches on 57 days in that of 1897. The extremes of temperature were—highest, 54·7° on the 19th ; lowest, 32·5° on the 2nd.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell to the large amount of 4·53 inches on as many as 28 days, compared with 2·20 inches on 13 days in March, 1901, and 1·98 inches on 18 days in 1902. The greatest daily rainfall was 1·00 inch on the 12th. The temperature in the shade ranged from 59° on the 22nd to 34° on the 2nd. The mean shade temperature was 45·7°, compared with 41·2° in 1901, and 46·4° in 1902. Since January 1st, 1903, the rainfall at this station amounts to 11·36 inches on 62 days, compared with 6·71 inches on 40 days in the first quarter of 1901, and 7·02 inches on 43 days in that of 1902.

The rainfall at Cloneevin, Killiney, Co. Dublin, was 3·40 inches on 29 days, compared with 1·50 inches on 21 days in 1902, 1·57 inches on 17 days in 1901, ·94 inch on 14 days in 1900, ·67 inch on 9 days in 1899, and an eighteen years' (1885–1902) average of 1·762 inches on 15·6 days. The maximum in the 18 years was 3·59 inches in 1888, the minimum was ·26 inch in 1893. The heaviest fall in 24 hours was ·90 inch on the 12th. The 8th and 10th were the only rainless days. At this station the total rainfall since January 1 was 8·30 inches on 64 days, compared with a fall of 8·17 inches on 62 days in the first quarter of 1900, 5·96 inches on 45 days in that of 1901, and 5·47 inches on 45 days in that of 1902.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall was 8·400 inches on 27 days, compared with 5·860 inches on 20 days in 1902, 4·295 inches on 14 days in 1901, and 1·311 inches on 13 days in 1900. The maximal falls in 24 hours were ·860 inch on the 24th, ·750 inch on both the 1st and the 22nd, and ·700 inch on the 20th. A severe storm blew on the 30th.

At Wellesley-terrace, Cork, the rainfall was 5·45 inches on 29 days. Within the past 25 years this rainfall in March was only once exceeded, namely, in 1897, when 5·57 inches were recorded. The number of rainy days, 29, had never been equalled in any month within the previous 25 years, the nearest approach to it being 28 days in November, 1892, and in December, 1899.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell on 27 days to the amount of 3·796 inches, of which ·630 inch was measured on the 19th.

PERISCOPE.

TUBERCULOSIS SOCIETY IN WASHINGTON.

A SOCIETY of physicians, clergymen, and others has been established in Washington for the purpose of conducting a campaign of education in regard to tuberculosis. The society purposes to raise funds to carry on a systematic diffusion of knowledge about tuberculosis, its prevention, and the relief of those who are afflicted, by means of public lectures, leaflets, and scientific documents. The work will also be made the subject of special instruction in the public schools.—*Medical Record*, N.Y., March 28, 1903.

THE CAUSE OF THE SLEEPING SICKNESS.

ACCORDING to Dr. Aldo Castellani, Special Commissioner sent out by the Royal Society, the sleeping sickness of Uganda and the related African regions is due to a special form of streptococcus that has a number of different biological characters, separating it from the well-known pathogenic cocci. It occupies a position between the *S. pyogenes* and the *S. lanceolatus*.—*Medical News*, N.Y., March 28, 1903.

BOILING AS A METHOD OF STERILISING CATHETERS.

C. B. NANCREDE, M.D., and W. H. HUTCHINGS, M.D. (*Medical News*, New York, January 10, 1903), give the following conclusions arrived at by a long series of experiments in catheter disinfecting :—

1. Although the washing with warm soapsuds is an absolute prerequisite to most methods of chemical sterilisation and is an excellent precaution, in the method of employing caloric we recommend, it is not necessary, as shown by Experiments 84 to 91, where no difference was observed in the time and thoroughness of sterilisation when this precaution was omitted, when compared with Experiments 78 to 83, where previous washing was done.
2. One of the chief obstacles in the way of catheter sterilisation has always been the oily lubricants. The boiling temperature promptly liquefies the vaseline usually employed, which will be seen floating upon the surface of the fluid, mechanically carrying away with it numerous germs mingled or adherent to the cold, semi-solid lubricant.
3. The English catheter is more readily sterilised than the soft-rubber instruments, and, what is of greater importance, can be repeatedly boiled without material damage, if

proper precautions are taken. 4. Experiment 65 (first paper) shows that the English web catheter can be boiled for any length of time without damage in a saturated solution of ammonium sulphate. As this boils at 104° C. it is superior to plain water, but subsequent washing in sterilised water is requisite to remove the crystals of the salt which are deposited on cooling. 5. The only precautions requisite in boiling English catheters in plain water are those necessary to prevent their coming directly in contact with the bottom of the vessel in which they are boiled; this can be done by enveloping them in gauze, or a towel. 6. Finally, these numerous experiments incontestably prove that (a) caloric can be successfully employed for all varieties of catheters with the exception of the soft French instrument, provided all air is expelled from the interior; (b) that this essential having been secured, although in a great majority of cases five minutes immersion in water which is actually boiling will suffice, ten minutes of actual ebullition should be employed, especially for the smaller calibred instruments; and (c) that a previous cleansing with warm soapsuds is desirable, although not essential, reducing as it does the time of exposure requisite to sterilise the instruments. As previously stated, the employment of a saturated solution of ammonium sulphate is desirable for English catheters, but is not essential, and detracts from the simplicity of the method.

ÉCOUVILLONAGE.

THE Paris School may be said to favour scraping the septic uterus, but have modified routine curettage by using a bottle-brush (*écouvillon*) of short strong quills. Budin (*L'Obstétrique*, 1901, July) says that he has used it since 1892, and reports the cases at the Clinique Tarnier from November, 1900, to July, 1901. In 33 cases from outside, 4 had only intrauterine injection, 13 prophylactic écouvillonnage, 16 digital curettage and écouvillonnage. One only died. On 59 cases beginning in the clinique, 5 had only injection, 54 écouvillonnage. None died. From the details given in the tables it would seem as if the cases and perhaps the causes of fever were too diverse to make a comparison of these results with those under other methods quite fair. Lea concludes his summary with a warm recommendation of the method from his personal experience. It is more painful than curettage, and needs anæsthesia.—*The Scottish Medical and Surgical Journal*, April, 1903.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XXI.—*Notes on Fourteen Cases of Operation for Radical Cure of Inguinal Hernia, between September and December, 1902, at the Royal Infirmary, Dublin.* By WALTER C. STEVENSON, M.D., B.Ch., B.A.O., D.P.H., B.A. Dubl. Univ.; Lieutenant, Royal Army Medical Corps.

IN these notes I have prepared a tabulated statement giving the particulars in each case of radical cure for inguinal hernia performed by me.

Before referring to this it may be advisable to mention briefly the routine followed, and to describe the operations generally.

I. PREPARATION FOR OPERATION.

For a few days before the operation patient has frequent baths, and bowels are well opened by saline aperients. On the day before the parts are shaved and an antiseptic dressing of lint and jaconet, soaked in corrosive sublimate lotion (1 in 2000), is applied, and fixed with a spica bandage. Before putting on the dressing the patient's abdomen and groins are scrubbed for fully twenty minutes with soap and weak carbolic lotion, followed by methylated ether and methylated spirits. A soap and water enema is administered to the patient on the morning of operation.

II. ASEPTIC TECHNIQUE.

A detailed account of aseptic surgery is unnecessary in these notes. The greatest care is taken that nothing except what has been sterilised by boiling, or otherwise rendered aseptic, should come near the site of operation. Surgeons and the Sister wear sterilised gowns, the orderlies white coats. Sterilised towels completely cover the patient, only barely exposing the part of the abdomen necessary for the operation. No. 1 silk alone is utilised for deep sutures, on account of its being more easily and certainly sterilised than the thicker silks. When strong ligatures are required No. 1 silk is used doubled or quadrupled. The tubes of silkworm-gut for the skin incision are kept immersed in 1 in 20 carbolic lotion, and boiled immediately before use.

The results have been very satisfactory, as every wound in the first thirteen cases healed by first intention, and no pus was observed throughout these cases. In the fourteenth and last case, dermatitis occurred over the operation wound, and involved the upper skin sutures.

III. DRESSINGS.

A sterilised pad (large enough to completely cover the skin incision) stitched to the centre of a piece of gauze six inches square. By this arrangement pressure can be maintained on the wound by the pad, while the dressing is secured by applying collodion on the gauze around the skin incision. The whole is covered by a couple of layers of cyanide gauze and wool, and firmly fixed with a spica bandage (flannel).

IV. AFTER TREATMENT.

Plain milk diet and soda water for three days. Mild saline aperient thirty hours after operation. Wound not dressed till the ninth day, unless the patient complained of pain or discomfort. Skin stitches removed at the first dressing. Patient is allowed to sit up from the eleventh to the fifteenth day. Out of bed for half an hour on the thirteenth to the twenty-first day. He is supplied with a fresh bandage and discharged from hospital on six weeks' furlough six to seven weeks after operation. To guard against the patient taking violent exercise, he is repeatedly warned that it is absolutely

necessary for the success of his cure that the wound should be supported by the bandage for at least three months after leaving hospital.

V. OPERATION.

The initial stages of the operation are the same in each case. A skin incision, from three to four inches in length, is made over the inguinal canal, commencing just internal to and a little below the spine of the pubes. Tissues are divided till the fibres of the external oblique with the external ring are exposed and cleared. The coverings of the cord are divided longitudinally, and the sac is isolated as far as the internal ring. A small opening is made in the side of the sac, and the finger passed into the general peritoneal cavity to insure that the sac is empty. The treatment of the sac varies according to the condition found. Preference is always given to Kocher's most recent method of dealing with it, which he calls "the ideal operation for radical cure of hernia." I give a short description of this operation, as it is not as yet published, as far as I know, in any English text-book. I would also like to state my reasons for preferring it, and why it is not applicable in every case.

Kocher's Ideal Operation.—The apex of the sac is grasped by the point of Kocher's hernia forceps (or any other catch forceps with long and slender blades will serve the purpose). The apex is first invaginated into the body of the sac, and then made to pass along the inguinal canal, through the neck of the sac, into the general peritoneal cavity. The skin is retracted upwards. The handle of the forceps is then depressed, causing the point to project against the anterior abdominal muscles, slightly above and external to the internal ring. A small longitudinal incision is made on to the point of the hernia forceps, through the muscles, thus exposing the sac. The sac is secured by an artery forceps and pulled through the above incision, at the same time releasing and withdrawing the hernia forceps. The sac by this procedure is inverted, and now has its peritoneal surface outermost. Its position and direction are completely altered, the neck now projecting against the anterior abdominal wall. The sac is transfixed and ligatured, and amputated close to the abdominal muscles. The

404 *Operation for Radical Cure of Inguinal Hernia.*

next step consists in narrowing as far as possible the inguinal canal. The forefinger is passed along the canal in front of the cord, thus making certain of its safety by keeping it behind the finger. Seven or eight Lembert's sutures are used as shown in the diagram. The first is passed through

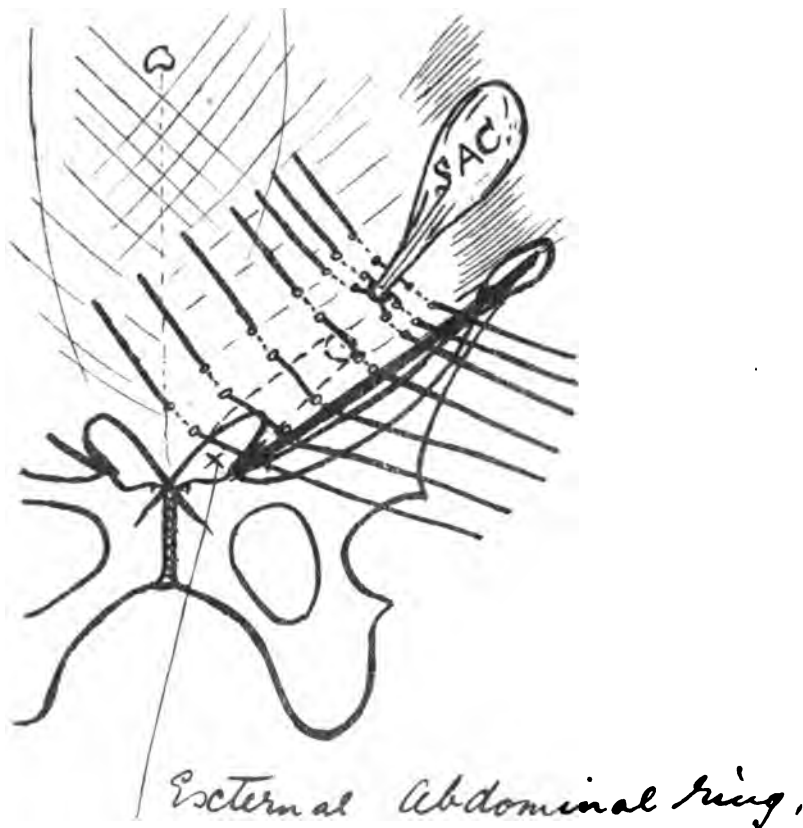


FIG. 1.—Diagram showing sutures passed to close left inguinal canal in Kocher's operation.

the abdominal muscles above the remains of the sac. The second and third sutures are passed through the external lip of the incision in the abdominal muscles, then through the neck of the sac, and finally through the inner lip. The remaining sutures are passed through the anterior wall of the inguinal canal, the last one being utilised in approximating

the pillars of the external ring. With the aid of a director when tying these sutures a puckered groove is formed, which projects backwards into the canal along its whole length.

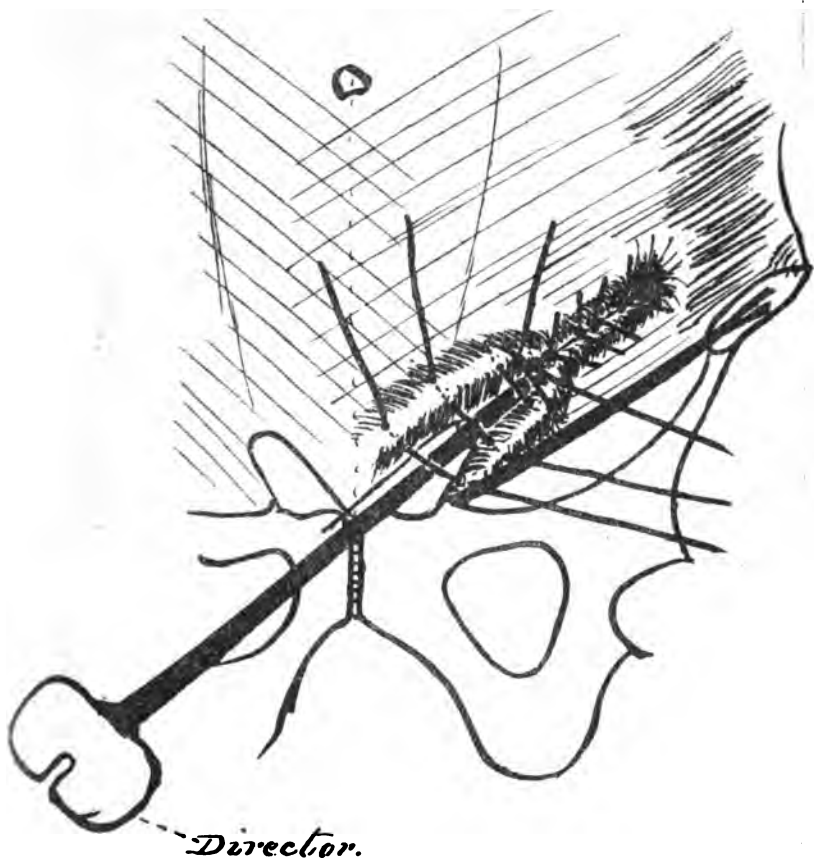


FIG. 2.—Diagram illustrating the result of tying some of the stitches shown in Fig. 1.

The above operation is most suitable when there is a fair sized sac which can be isolated intact. When the sac is somewhat torn and its capacity small, I perform practically the same operation, with the exception that the sac is not turned inside out. Four of the ten cases done by Kocher's method were of the latter variety. In six of the total fourteen cases (43 per cent.) Kocher's ideal operation was employed.

TABLE showing particulars of Fourteen Cases operated on for Inguinal Hernia

1 No. of Case	2 Name	3 Age. Years	4 Service when Hernia occurred. Years.	5 Period between occurrence of Hernia and Operation. Months.	6 Whether Truss used	7 Side on which Hernia occurred	8 Variety
1	Constable	23	2	2½	Yes	Right	Congenital
2	Collier -	21½	2½	6	Yes	Right	Acquired
3	Harcourt	26½	2½	2½	No	Right	Acquired
4	Mills -	22½	1½	13	Yes	Left	Acquired
5	Hayes -	21	1½	9	Yes	Right	Acquired: incomplete
6	Kirby -	20	½	7	Yes	Right	Acquired
7	Handley -	20	½	1	Yes	Right	Congenital
8	Branch -	19	½	14	Yes	Right	Acquired
9	Lamb -	20	1	10	Yes	Left	Acquired
10	Kelly -	19	½	1	No	Left	Congenital: incomplete
11	Ellis -	23	Under ½	Short	No	Left	Acquired
12	Powell -	19	½	9½	Yes	Right	Acquired
13	Jones -	20	1½	½	No	Right	Acquired
14	Davies -	22	½	1	No	Right	Acquired

Cases 1 to 13 healed by first intention.

between September, 1902, and January, 1903, at the Royal Infirmary, Dublin.

9 Cause	10 When and where first noticed	11 Sac	12 Operation	13 Remarks
Direct injury while exercising a horse	In barrack room the same evening	Very adherent to cord and surrounding tissues	Kocher	—
Do.	A few days later	Opaque and thickened	Kocher, ideal	—
Do.	On day of injury	Transparent and with thin walls	Kocher, ideal	Highest temperature after operation, 98° 60 F.
Attributed to a course in the gymnasium	At gymnasium	Small and thickened; easily isolated	Kocher	Rupture gave patient little inconvenience, but disqualified him for foreign service; highest temperature after operation, 98° 60 F.
Direct injury exercising a horse	A few days later	Peritoneum forming sac bulging at internal ring	Bassini	Highly-arched conjoined tendon; structures forming inguinal canal badly developed.
Attributed to gymnasium	At gymnasium	Transparent with very thin walls	Kocher	—
Direct injury in riding school	At stables a few days later	Thin and very adherent to cord	Modified Bassini	Sac passed through external oblique and neck fixed there; testicle is retracted to external ring.
Direct injury at gun practice	While at work a few days later	Thickened and opaque; occluded near neck	Kocher	Rupture descended ½ inch into scrotum after severe straining; other bronchitis followed operation.
Direct injury lifting heavy weight on coal fatigue	In barrack room the following morning	Thickened and opaque	Kocher, ideal	—
Attributed to gymnasium	At gymnasium	Thin-walled, and transparent cord imbedded in posterior wall	Bassini	Omental hernia; descended with great difficulty; diagnosis not verified till six days after admission to hospital.
Do.	On inspection by a medical officer as a prisoner	No sac found protruding into inguinal canal	Bassini	Extensive varicocele excised; large and patulous internal ring and inguinal canal not completely exposed, as patient took anæsthetic badly; operation satisfactory, as inguinal canal well closed up.
Direct injury at gymnasium	In barrack room following day	Thickened and opaque	Kocher, ideal	—
Direct injury in riding school	In barrack room the same day	Do.	Kocher, ideal	—
No history of injury	In barracks while wearing tight overalls	Transparent, but with firm walls	Kocher, ideal	Omental hernia; third day dermatitis occurred, which subsequently involved tracks of upper skin sutures; lower half of wound healed by first intention; dermatitis at first strictly confined to the area over which iodoform gauze had been applied; this dressing used in this case only.

Kocher, I believe, estimates that the ideal operation is possible in only about 25 per cent. of his cases. But these are probably drawn from every age and condition of patient, while the hernias in a Military Hospital are nearly all found in young, healthy men, and are usually of short standing when operated on.

The advantage of Kocher's operation as compared with Bassini's—(1) There is less injury to the tissues in that the external oblique muscle is not divided along the inguinal canal as in Bassini's operation; (2) on account of this the patient can be allowed about sooner with less risk of injurious effects; (3) should suppuration occur and the deep stitches give way, the parts are in no worse condition than before the operation.

But Bassini's operation is preferable (1) in most congenital hernias, where the sac and cord are in intimate connection, rendering it impossible to isolate the sac without considerably damaging it (examples—Cases 7 and 10); (2) when the sac cannot be seen at the external ring, and it is necessary to explore the inguinal canal (examples—Cases 5 and 11).

VI. FURTHER REMARKS ON THE TABULAR STATEMENT.

It is interesting to note:—(1) Column 4—seven of the fourteen cases (50 per cent.) had under four months' service when the hernia occurred; (2) Column 7—ten of the fourteen cases (71 per cent.) were on the right side; (3) Column 9—in nine of the fourteen cases (64 per cent.) there was a definite history of an injury.

I attach some particulars of the temperatures in each case.

In conclusion, I have to thank Lieut.-Cols. Hodson and MacNeece, R.A.M.C., for giving me the opportunity and every facility for performing these operations, and also Mr. Haughton, Visiting Surgeon, Dr. Steevens' Hospital, Dublin, for his assistance at the first two, and Lieutenant Power, R.A.M.C., and Civil Surgeon G. P. Meldon in the remainder of the cases.

TABLE OF TEMPERATURES showing the evening temperatures, the morning temperatures being always about normal.

—	—	1st Evening of Operation	2nd Evening after Operation	3rd Evening after Operation	4th Evening after Operation	5th Evening after Operation	6th Evening after Operation	7th Evening after Operation	8th Evening after Operation	—
1	Constable	98.8	Normal	99	Normal	Normal	Normal	Normal	Normal	—
2	Collier	99	99	99.8	99	100	99.6	Normal	Normal	
3	Harcourt	98.6	Normal	Normal	Normal	Normal				
4	Mills	98.6	98.6	Normal	Normal	Normal				
5	Hayes	100.4	98.6	Normal	Normal	Normal				
6	Kirby	98	99.8	Normal	Normal	Normal				
7	Handley	98.4	100	99	99	Normal	Normal	Normal		
8	Branch	99	99.8	100	100.2	101	Sub-normal	Sub-normal	—	Suffered from ether bronchitis. Morning temp. 5th day was 101.8°
9	Lamb	102.2	99.8	99	Normal	Normal				
10	Kelly	98.2	99	Normal	98.8	98.8	Normal	Normal	Normal	
11	Ellis	98	98.4	100	99.4	99.2	Normal	Normal	Normal	Suffered from tympanites and constipation on 3rd, 4th & 5th days
12	Powell	99.8	98.8	Normal	Normal	Normal				
13	Jones	99	99.2	98.8	Normal	Normal	Normal			
14	Davies	99	98.6	100	101	Normal	Normal	Normal	—	Dermatitis occurred on 3rd day when iodiform gauze had been applied. On 4th day suppuration involved upper skin sutures.

ART. XXII.—*Hæmoglobinuric Fever: Its Ætiology, Diagnosis and Treatment.*^a By FRANCIS GETHIN HOPKINS, M.D., Univ. Dubl.; Lagos, W. Africa; Senior Assistant Medical Officer, W. Africa.

NOT so many years ago, both by medical men and the laity, this disorder was called "Blackwater Fever," a very expressive name indeed, considering that to many the passage of a large quantity of "black urine" was the first intimation to the patient that he was being attacked by this grave disease. The term blackwater fever is generally supposed to have originated on the west coast of Africa.

In the early part of the nineteenth century French Colonial Medical Officers seem to have been the first to describe it, and later statistics from the French settlement of Gorée show that it was quite common there, and generally recognised; for in the period between 1864 to 1870 there occurred of *fièvre bilieuse hématurique* 109 cases with 35 deaths.

Indian writers of earlier days seem to have been singularly silent on the subject, and owing to this fact it is supposed by many observers to be a disease of recent introduction there.

That it has always existed on the flat coasts of Tropical Africa, both on the west as well as the east, there can be no doubt whatever from accounts handed down by European traders and natives; still, in comparison with other tropical diseases, and considering the gravity of hæmoglobinuric fever, it is remarkable that very little has been written on this subject until quite recently. This may be accounted for by the obscurity of the true cause of the disease, and the fact that more scientific and careful methods of observation have been only lately in vogue with those dealing with diseases peculiar to the tropics.

This disorder has been called by many various names from time to time—such as bilious hæmoglobinuric fever, malignant bilious fever, hæmorrhagic malarial fever, *fièvre bilieuse grave*, black jaundice, bilious remittent—by North American writers, and many others. The natives of the Gold Coast

^a Being a Thesis read for the Degree of Doctor of Medicine in the University of Dublin, April 17, 1903.

call it "attridi asara," meaning "snuff-coloured bilious fever," in contradistinction to "attridi," meaning "bilious fever."

The geographical distribution of hæmoglobinuric fever is now a large one. It is known to exist, without doubt, on the east and west coasts of Africa, in British Central Africa (at an altitude of 3,000 feet), Senegal, Madagascar, Mauritius, Algiers (according to Kelsch and Kiener), the hotter regions of the American Continent, West Indian Islands, Indian Terai, Assam, Upper Burmah, Java, and British New Guinea. It is now rare in Europe, but it has been observed in Italy, Sardinia, Sicily, Smyrna, Corinth, and formerly, according to Dr. Schoo, in Holland. To sum up, its geographical distribution may be said to be practically identical with that of malaria. So far I do not think any place has been found where it exists independently of malaria.

This fever may be briefly defined as a severe fever occurring in malarious countries, or in subjects recently returned from them, characterised by a more or less sudden onset, with prolonged rigors, severe pyrexia, marked bilious symptoms, with the appearance almost at the same time of hæmoglobinuria.

The disease affects Europeans and imported Indians and Chinese, but not the latter to as great an extent as the former. The natives of West Africa do not, in my experience, contract it, but Papafio Easmon and others have reported cases in negroes on the Gold Coast. Cases of the disease in negroes have been reported to me from time to time, but any I was able to see personally proved by microscopical examination of the urine to be bilharzia disease. Sex appears to have no influence as regards susceptibility, and, as regards age, personally I can state nothing, as we have no European children residing on the west coast of Africa. That length of residence has a decided influence most observers are agreed. Daniels in his "Notes on Blackwater Fever in British Central Africa," "Royal Society's Malaria Reports," 5th Series, 1901, gives the following interesting statistics about first attacks:—"Out of 114 first attacks, 4 were in the first 6 months of residence, 17 in the second half-year, whilst for the 2nd, 3rd, 4th, and 5th years the numbers were 40, 27, 12, and 5 respectively. There were 9 cases from the 6th to the 10th year, and none

after that length of residence." It is more common in some districts than in others, and seems to coincide with the prevalence of malaria. Unusual exposure does undoubtedly precede some attacks. Alcohol, venereal diseases and oversexual indulgence seem to have no direct bearing on the disease beyond their debilitating effects.

The actual cause of hæmoglobinuric fever still remains in a state of obscurity. There is, however, now an inclination on the part of most observers to consider it a variety of malaria. It is well known that it appears in all the most notoriously malarial regions, and keen observers have found the small ring form of parasite peculiar to the tropical forms of malaria in the blood of those suffering from it, in most cases if not in every case. The large tertian and quartan parasites, it is said, have also been observed a few times. The more recent investigations go to show that where the highest malarial endemicity prevails hæmoglobinuric fever appears, the endemic index being obtained by an examination of the blood of native children at ages from 0 up to 15 years. Stephens and Christophers, and Amett and Dutton, have demonstrated, in various towns in West Africa where it is very prevalent, an endemic index of from 20 per cent. to 100 per cent. It was my privilege to be detailed to ascertain the endemic index in one town of about 70,000 inhabitants, situated at an elevation of 800 feet, and about 160 miles from the coast. I obtained the following result:—

0 to	5 years	71·8	per cent.	infected.
5	„ 10	„	39·5	„ „
10	„ 16	„	10·7	„ „

The total for all ages showing an index of 35·1 per cent., somewhat lower than that obtained in other towns in the Colony. Hæmoglobinuric fever is extremely common in this town among the small European population of about 12.

In India recently it has been proved that where the endemic index is low hæmoglobinuric fever does not exist, or to a very small extent. I give as an instance of this Calcutta (*vide* Reports to the Malaria Committee, Royal Society, 6th Series, page 5). A different state of things is found in the Duars, Indian Terai, Jeypore (Madras), and Assam, where the index is extremely high. The condition of life in the latter places

is similar to that in West Africa, Europeans and natives living in close proximity to one another. It is also reported that the varieties of mosquitoes are similar to those found in West Africa.

Since I have regularly used the microscope in following the symptoms and course of malaria I have found parasites, with few exceptions, in the blood of hæmoglobinuric fever patients, but only before the attack and during convalescence; never during the height of the hæmoglobinuric symptoms. This appears to be the experience of most observers—namely, that the parasites disappear rapidly after the onset of the symptoms. This rapid disappearance of the parasites is explained by their losing their hosts owing to the rapid destruction of the blood corpuscles usual in this disease.

Any medical man who has lived for a considerable length of time in a highly malarial country such as West Africa, in reviewing the cases of hæmoglobinuric fever which have passed through his hands, cannot, in the light of our present knowledge of tropical hygiene, fail to be struck by common salient points in the mode of life, character, and general health of those who were attacked by this disease. He will remember that probably, without exception, each patient was in a debilitated state of health, suffering perhaps from irregular and untreated attacks of fever, addicted to late hours, excessive drinking, over-sexual indulgence, careless of chills, and utterly regardless of the necessity of regularly taking quinine and the avoidance of mosquito bites at night.

After a fairly long experience in West Africa I can positively assert that I never knew hæmoglobinuric fever occur in a regular quinine taker, or in one who paid due attention to what are merely comforts in that climate—namely, malarial prophylaxis. I will give a typical example of this in the case of a Roman Catholic Mission that I have attended for years. It totals about 12 nuns and 8 fathers. They suffer from repeated attacks of malaria, rarely seeking medical aid for them, and live on the poorest food, thus lowering their vital powers. They neither take quinine regularly nor do they use mosquito curtains, the result being that they represent annually about 50 per cent. of the cases of hæmoglobinuric fever. Their cells or rooms are over large dormitories con-

taining quite young children, all showing a high percentage of malarial infection.

Such observers, however, as Koch, Sambon, and Yersin, on the other hand, do not consider hæmoglobinuric fever to be a variety of malaria. Koch quotes 41 cases, of which only 18 exhibited malaria parasites. On these and the following further grounds Koch is of opinion this disease is not malaria. When malaria parasites are present their number is not proportionate to the hæmoglobinuria, as would be expected by analogy with Texas fever. In malaria parasites are very numerous without hæmoglobinuria being originated, and on minute comparison between attacks of malaria and those of hæmoglobinuric fever it will be found that essential clinical differences are exhibited. Finally, judging by the fact that hæmoglobinuric fever may be connected with two entirely different kinds of malaria—namely, ordinary tertian fever and tropical fever—Koch comes to the conclusion that this disease is not related to malaria. F. Plehu, A. Plehu, and many others hold the opposite opinion. Sambon considers it a specific disease which is identical with, or nearly related to, Texas fever. Yersin in two cases found no parasites, but discovered a bacillus which he cultivated and found had a toxic effect on mice and rabbits, and, therefore, came to the conclusion that hæmoglobinuric fever had no connection with malaria.

Many writers—Koch chiefly, though—assert that it is due to quinine poisoning. Koch also maintains that in the absence of quinine, some food, drink, or other substance may, in the tropics, cause hæmoglobinuria. He has few supporters, and the following reasons may be quoted :—

1. Hæmoglobinuric fever occurs only in notoriously malarial regions.

2. Reliable observers have confirmed the presence of malarial parasites, especially at the commencement of the disease.

3. It occurs in persons who never take quinine ; I have seen many such cases.

4. Hæmoglobinuric fever is only endemic in certain malarial countries ; but in others, where quinine is taken to a great extent, it does not exist. For example, in many parts of India quinine is taken as a panacea for every feverish disorder, and yet hæmoglobinuric fever is practically unknown.

5. The same person may at times develop hæmoglobinuria after a small dose of quinine, whereas previously or subsequently he can take large doses without symptoms. I have given as an experiment 10 grs. of quinine in 5 gr. doses with 4 hours interval, and reproduced hæmoglobinuria in a patient getting better from hæmoglobinuric fever. In two cases, during convalescence—i.e., about 8 days from the commencement—I administered 15 to 20 grs. of quinine daily without a re-appearance of the hæmoglobinuria. There may be also such a thing as an acquired or congenital idiosyncrasy towards quinine.

6. The administration is not confined to malaria; hæmoglobinuric fever, with very few exceptions, occurs only with malaria. In enteric fever I have administered quinine freely, but never observed hæmoglobinuria to follow.

"In very malarial places a constant destruction of red blood cells is going on under the influence of chronic malaria. The blood-forming organs are therefore overworked, and they yield a product feeble of resistance. A fresh invasion of parasites suffices alone, or in conjunction with quinine—rarely quinine alone—to cause a wholesale destruction of red blood cells infected and non-infected, and thus to originate hæmoglobinuric fever."

A. Plehu says the least valuable corpuscles perish in this disease, hence in a few days' time a large dose of quinine can be borne without any bad effects.

Prodromal symptoms are not specially defined in this disease. They differ in no respect, in my experience, from those of ordinary malaria.

The commencement of the disease is ushered in by long and severe rigors, which are never absent. The temperature rises to 104° F. and often to 106° F. Headache, severe pain in the back, and aching of the limbs are marked. There is a feeling of oppression and great restlessness. Some patients become possessed by absolute hopelessness and terror. This lasts a variable time, and then a stage of perspiration begins. It must be remembered in this fever, as in malaria, there is a great variation in the symptoms, so no one description would suit a number of cases.

Violent and frequent attacks of bilious vomiting occur.

Constipation is the rule, but diarrhœa with blackish stools, due to infiltration of hæmoglobinuric serum into the intestine, may be seen. There is a sense of fulness or pain over the liver and spleen.

Jaundice is an early symptom and often is very deep. In cases that recover it may not last long, and gives place to a peculiar livid hue.

The urine varies in colour from claret to coffee or porter. It is opaque, and the froth on it is of a red or yellow colour. On standing, a copious sediment forms, which under the microscope shows vesical and renal epithelium, grains of hæmoglobin, hyalin and granular epithelium, small masses of *débris*, and occasionally a red blood cell. The reaction usually is acid, but it may be neutral or alkaline. F. Plehu says the specific gravity is increased—1030 to 1032. Albumin is present, and varies according to Esbach's method between .05 and .2 per cent. Oxyhæmoglobin or methæmoglobin and urobilin are also found. Biliary pigment and bile acids have been demonstrated in the urine by the Plehus and Berthier. The urine is voided frequently, and often with much pain, in consequence of the irritation caused by its pathological constituents. The quantity is decreased, and complete anuria may set in. The anæmia is very profound, and in this the danger of the disease lies.

I have found marked leucocytosis commencing with the attack and continuing for a long time after. Sambon and others have also observed this. Sheube says, "The hæmoglobin set free is partly taken up by the kidneys and secreted with the urine and partly invades the portal circulation and becomes transformed into biliary pigment in the liver. Too much bile is produced, and the liver being unable to excrete it a portion gets into the circulation through the lymphatics, and in this way jaundice is produced. Hæmoglobinuria and jaundice are therefore the principal features of hæmoglobinuric fever."

The bodily strength diminishes rapidly and emaciation comes on. The pulse is small and irregular, and attacks of dyspnœa are frequent. Severe headaches, drowsiness, and delirium setting in show defective kidney activity, and generally are indications of a fatal issue.

Hyperpyrexia, heart failure, the formation of a thrombus

in the heart, embolism (Plehu), or the serious interference with life through the enormous blood destruction (Koch), may cause death.

Suppression of urine usually occurs when the urine is commencing to clear. Uræmic symptoms are not the rule, as consciousness remains up to the end. The suppression is rarely complete, as a few teaspoonfuls of urine may be passed daily. I have seen the temperature normal and the mind quite clear to within a few hours of death in such cases. Temporary suppression may occur early in the disease. There is little evidence of structural changes in the kidneys. Can it be a mechanical obstruction?

The main causes of death are undoubtedly suppression of urine, cardiac failure, and hyperpyrexia. The first is the commonest in my experience.

The duration of the disease when there are no relapses is about three days. Relapses are common, and I have seen as many as three occur. The duration of the relapse is often longer than the primary attack.

The *post-mortem* appearances in hæmoglobinuric fever do not appear to have been much studied. It has not been my good fortune to obtain many *post-mortems* in spite of the large number of cases of hæmoglobinuric fever I have seen.

The heart is mostly dilated and the muscle pale, thrombi may be extensive, and ecchymoses are found in the pericardium and endocardium.

The liver is enlarged, hyperæmic, and deeply stained; cysts containing light yellow-coloured masses are frequently found therein. The acini often appear distinctly separated by dilated biliary ducts full of bile.

The kidneys show sub-capsular and interstitial hæmorrhages. They, as a rule, are hyperæmic.

Microscopically, the renal epithelium is found normal, but obstructed with hyaline casts and yellow pigment. The brain, where cerebral symptoms have existed, is hyperæmic; there is œdema of the brain substance and meninges, with fluid in the ventricles. Pigment is found in the internal organs, but is said to be less than usually seen in malaria.

The mortality varies very much and is high. It is much lower now on the west coast of Africa than it was nine years

ago. Some maintain it is a milder form of the disease that is seen now, but my experience does not lead me to agree with this suggestion.

The treatment of hæmoglobinuric fever is difficult, as we are still so much in the dark as to its cause. In the old days, heroic doses of quinine, amounting in some cases to over two drachms daily, were administered. These large doses were given on the assumption that it was a most pernicious type of malaria. Now quinine is withheld by almost all sound observers, as it has been found that the mortality without it is much less. F. Plehu had 25 cases and 1 death, or 4 per cent. A. Plehu had 53 cases and 5 deaths, or 9·8 per cent. They quote 35 cases treated at the same time with quinine and 15 deaths, or 43 per cent.

Last year (1902) I had 6 cases and 1 death. All were treated without quinine. The death occurred in a man who before my arrival had consumed in less than 12 hours one drachm of the drug. Salicylate of sodium has been used with fair success in the early stage as a diaphoretic, antipyretic, and renal stimulant. I used it extensively in every case, and with a very gratifying amount of success. Lately Dr. O'Sullivan-Beaure, on the east coast of Africa, claims to have cured 5 cases with a native remedy, a decoction of the root of a shrub—the *Cassia-Bearana*.

The most successful treatment that I have found is that introduced by Dr. Gouzieu, late Chief Medical Officer of Dahomey. This consists essentially in the subcutaneous injection of a standard saline solution, 7 grams of pure salt to 1,000 grams of water. From 100 to 300 grams of this solution is injected subcutaneously in the hypogastric region. One injection daily is the rule.

The simpler method, and the one less liable to risk, is the use of an enema of 200 grams of the solution. As many as six of these can be given at varying intervals. They allay the great shock caused by the advent of the fever, and besides act as diaphoretics and diuretics and promote the elimination of the toxin into the bowel, thus ridding the body tissues of it.

Dr. Gouzieu at the same time gives an infusion of the leaves of *Cassia occidentalis*, 15 grams of the leaves to 1,000 grams of sweetened water. As much as 3 litres a day of this can be

given. He quotes 53 consecutive cases successfully treated by this method. He also gives hypodermic injections of quinine if the temperature is very high.

In the initial stage a strong purgative and saline should be administered, aided, if necessary, by a large enema. Phenacetin gr. 10 does no harm and aids perspiration. The patient should be put between blankets with hot bottles, if necessary, and all air excluded from his body, as the slightest draught exaggerates the rigors; large quantities of hot drinks should be given. If the vomiting is distressing it ought to be treated by sinapismus.

Hyperpyrexia is best treated by sponging with iced water, if ice is available. Sometimes the iced bath or pack are necessary. Restlessness and headache are best treated by cold to the head. If drugs are needed sulphonal is a safe one to use.

The strength must be maintained by light nourishment in small quantities, and often. Alcoholic and other stimulants must be given when indicated. Should suppression supervene the ordinary treatment for it should be adopted.

To sum up, I have learnt from experience that the main points, outside any specific treatment, are to watch your patient, constantly looking out for symptoms and treating them in time as they arise. To change from one treatment to another too hastily is inadvisable.

In conclusion, the object of this paper has been to throw some light on a disease which, though well recognised and undoubtedly of a serious and most fatal type, has a literature of an extremely scanty nature. I trust that I have brought strong evidence to bear on its malarial origin and undoubtedly malarial nature. My clinical and pathological views are based on an experience of nine years in West Africa, where I have had, unfortunately, too many opportunities of observing the effects of this terrible disease. It is only by a careful tabulation of the experience of those whose work lies beneath tropical suns that we can hope to mitigate the awful results of those malarial disorders, which have earned for the west coast of Africa the unenviable title of the "white man's grave."

The work of the tropical schools, headed by Majors Ross and Manson and their able co-workers, and the improved methods of research and careful scientific observation which are at present carried on by colonial medical officers in tropical

climates, already show immense strides towards the amelioration of conditions of life in climates now called unhealthy, and leads us to hope that at no distant future increased knowledge of tropical hygiene, and the sanitary and social advantages resulting therefrom, may enable a white man to take up work on the west coast of Africa, with as reasonable an expectation of life as he would nowadays have in most parts of India.

ART. XXIII.—*Delirium in Febrile Conditions*.^a By KINGSMILL WILLIAMS JONES, M.A., M.D., D.P.H., Univ. Dublin; Ex-Scholar, Trin. Coll. Dub.

THE infectious diseases accompanied by high temperature can affect the higher functions of the brain at two periods—either (1) while the temperature is above normal, causing delirium or febrile insanity; or (2) after the temperature has fallen and the disease is over, causing post-febrile insanity. This post-febrile insanity is a very rare condition, and although it may occur after any fever Clouston considers that it is found oftenest after scarlet fever. It is, generally speaking, incurable. This insanity is not merely due to the wasting and exhaustion caused by the fever—that is, it is not the same as the insanity and low mental condition found amongst the population of a town which has stood a long siege, or the insanity found amongst soldiers after a very long and trying campaign. This form of insanity usually disappears with good food and rest, so that the specific poison of the fever must be a factor in causing post-febrile insanity.

The first-mentioned form of insanity—the delirium which occurs during a state of high temperature—is, of course, a very common form of insanity; in fact, it is not very often that you find a normal mental condition in temperatures over 104°. But here also there does not appear to be any definite relation between the height of the temperature or the severity of the disease and the state of the brain; as, for instance, I have seen, while a resident in Cork-street Fever Hospital, in the enteric ward, a man with a temperature of 105° sleeping quietly, and on waking being able to talk quite rationally, and in the same ward a man with a temperature

^a A Thesis read for the Degree of Doctor of Medicine in the University of Dublin, April 17, 1903.

of 103·5° who was put in a straight jacket as he had an attack of homicidal mania.

Febrile insanity or delirium may be classified into four varieties :—

1st. Simple delirium, which is merely a rambling of the mind—very common in all febrile conditions, and which may remain simple delirium or may go on to the 2nd, 3rd, or 4th varieties.

2nd. The so-called busy delirium. The patient is always trying to go about his business, insists on getting out of bed to catch a train, or tries to lift the bed, thinking he is carrying a load, and talks loudly or shouts about what he is doing. This form of delirium is fairly common in typhus, enteric, erysipelas, and in pneumonia, especially if in the latter there is an alcoholic history.

3rd. Delirium ferox. In this the patient may suddenly jump up out of bed and seize the first object handy to hurl at the head of anyone approaching his bed, or even without anyone moving in the ward may get out of bed and catch the patient in the next bed by the throat and try to choke him. I have seen only three cases of delirium ferox; two were men with enteric, the other was a woman about 30 years of age with measles.

4th. A low muttering delirium, may be seen oftenest in bad cases of enteric, and is accompanied with a weakening of the systolic sound of the heart.

Of all fevers, febrile insanity is commonest in typhus, and in it the mental disturbance appears much greater in men than in women; and here I may add that during my residence in Cork-street I noted a much greater proportion of cases of febrile insanity amongst the male cases generally than amongst the female. In fact, with the exception of the woman with measles, who had delirium ferox, I did not see any female cases of busy delirium or delirium ferox.

In typhus an abnormal state of mind is not a complication. It is a symptom of the disease (which, however, in rare cases may be absent). This abnormal state of mind occurs early and shows itself in the way the patient speaks and in the expression of the face, especially the eyes, which have a worried or anxious expression. Here also I may say that there is another objective symptom of typhus which occurs early, and

is of great help in diagnosticating the disease—that is, the smell of typhus. All fevers are supposed to have their diagnostic smells; but, for my part, I could never differentiate between the smell of pneumonia and that of enteric, while the smell of typhus appeared distinct from all other fever smells. It is a sort of musty smell, and I have got a very similar one in damp vaults containing old coffins.

The other infectious diseases which principally cause mental disturbance during the febrile condition are—small-pox, enteric, pneumonia, and erysipelas. Although I have seen about 130 cases of scarlet fever, I do not remember seeing a well-marked case of mental disturbance during that fever. In measles also it is rare.

Treatment.—Simple delirium and the low muttering kind are, as a rule, easily treated. Any of the ordinary hypnotics, such as paraldehyde, trional, morphin, chloral, or bromides seem to act well; perhaps the best results are got from paraldehyde. But in my experience all the above are practically useless in a case of busy delirium or delirium ferox. Within the space of two hours I have given $\frac{1}{2}$ gr. morphin, 60 grs. chloral hydrate, and 90 grs. potassum bromide to a man with pneumonia who had an alcoholic history, and who had busy delirium. This large dose of hypnotics did the man no harm, neither had they the slightest effect in quietening him and making him sleep. Nor do cloths wrung out in ice cold water applied to the head appear to be much use. Hyoscin is, of course, well spoken of, but I have no experience of its use. The one drug which appeared to act was apomorphin in $\frac{1}{12}$ gr. doses to adults. Instead of making the febrile delirious patients vomit it makes them sleep, and by chance I found that it acts better when it is given about 10 minutes after a hypodermic of $\frac{1}{2}$ gr. morphin.

A very serious complication of measles in young, ill-nourished children is capillary bronchitis or broncho-pneumonia. The temperature goes up to 103° or 104°; the child is very restless, tossing about the bed and cannot sleep. This is a form of delirium which is very hard to treat. On two occasions I have seen the temperature come down below 100° and the child sleep peacefully for 4 or 5 hours by giving it an enema of about 3iss of water at 65° to 70° F. I have also seen this fail completely on another occasion.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Manual of Practical Anatomy. By D. J. CUNNINGHAM, M.D. (Edin. et Dubl.), D.Sc., LL.D., D.C.L. (Oxon.), F.R.S.; Professor of Anatomy in the University of Edinburgh. Volume First. Upper Limb; Lower Limb; Abdomen. Third Edition. Illustrated with 205 Engravings, many in colours. Edinburgh and London: Young J. Pentland. 1903. Cr. 8vo. Pp. xvii. + 605.

THE first point which catches the reader's eye is the change on the title-page in the description of the learned author's position—"Professor of Anatomy in the University of Edinburgh." So "Dan" Cunningham's "translation" becomes an accomplished fact, and the loss to the School of Physic in Ireland which it involves is fully realised for the first time.

To review the previous editions of this work was to us a pleasant task—there was so much to admire and approve, so little to criticise or to question. This being so, we might well content ourselves by merely calling attention to the appearance of the third edition of what has long won its way as a standard text-book on Human Anatomy. In his Preface, however, Professor Cunningham shows that the "Manual of Practical Anatomy" as it is now issued differs very considerably from previous editions.

It is desirable that we should point out the nature and scope of the changes which have been effected.

In the first place, the text has been carefully revised, yet so carefully that the book has not grown in bulk. The pruning knife has been at work to make room for new and important matter. The sections in which the chief changes will be manifest are those which treat of the thoracic and abdominal viscera. The models prepared by the formalin method of Blum under the supervision of Professor His some

years ago modified previously existing ideas of the form and relationships of the various viscera. Researches more recently made by skilled anatomists like Symington, Young, Fraser, Birmingham, Addison, Huntingdon, Robinson, Dixon, Keith, Hepburn and others, have greatly extended our knowledge of the alterations in neighbouring organs which are produced by changes in the degree of expansion or contraction of the hollow viscera. Hence, the topography of the viscera is described in the present edition with greater clearness and accuracy than was ever before possible, and certain erroneous impressions on the subject have been corrected in the light of modern investigations.

Perhaps the most noticeable feature in the new edition is the freshness of the illustrations. A very large number of the old figures has been withdrawn. Their place has been taken by more artistic drawings, several from the pencil of Mr. J. T. Murray, who is spoken of by Dr. Cunningham as "an artist who has obtained an almost unrivalled reputation in the treatment of anatomical subjects." Many other illustrations have been reproduced from the recently published Text-book of Anatomy, of which Professor Cunningham was editor and co-author. The sources from which all borrowed illustrations are taken are in every case indicated in the text.

In closing this brief notice of a work which is a credit to the Dublin School of Anatomy in the twentieth century we have only to reiterate our good wishes for its distinguished author in connection with his occupancy of the famous Chair of Anatomy in the ancient University of Edinburgh.

Atlas of Illustrations of Clinical Medicine, Surgery and Pathology. Compiled for the New Sydenham Society (a continuation of the "Atlas of Pathology"). Fasciculus XVI., or V. of New Series. Coxa Vara: Plates A to I. Miscellaneous: Plates J. to L. London: The New Sydenham Society. 1903. Folio.

THE present instalment of this really fine Atlas is devoted to surgical subjects—a reprint of Mr. C. R. B. Keetley's

classical essay on "Coxa Vara," forming the main portion of the letterpress.

Mr. Keetley's paper was originally read by him in 1900, before the Medical Society of London, and appeared in Vol. XXIII. of the Transactions of that body. It was reprinted next year in the author's "Orthopædic Surgery," published by Messrs. Smith, Elder & Co., of London.

But the great value of the article is immensely enhanced by the splendid series of radiographs illustrating the disease which have been liberally placed at the disposal of the editor of the Atlas, Mr. Jonathan Hutchinson, F.R.S., by Mr. Robert Jones, of the Liverpool Southern Hospital. As the editor observes, "these radiographs are, without exception, most successful productions, and their merit is, we believe, due to the skill and energy of Dr. David Morgan, who assisted Mr. Jones in their production." The plates are described as being "from the Jones-Morgan collection."

The "Miscellaneous" section of this, the fifth, fasciculus of the new series of the "Atlas" includes three plates—the first, a radiograph of ununited fracture of the surgical neck of the humerus, under the care of Mr. F. M. Mackenzie, of Sloane-square, London W., who himself took the radiograph.

The second plate illustrates a case of disease of the elbow joint, with remarkable displacement of the bones of the forearm in a female patient, the subject of inherited syphilis. The report of the case, or "narrative," by Mr. Hutchinson, is reprinted from the pages of the "Polyclinic Journal" for May, 1900.

The third plate includes four photographs showing a very exceptional form of malignant disease of the skin—multiple alveolar (?) carcinoma. The case was recorded in detail by Dr. S. W. Allworthy, of Belfast, in the sixth volume of the "Transactions of the Dermatological Society of Great Britain and Ireland." The histological examination was by Mr. George Pernet. The photographs were supplied by Dr. Allworthy. Subsequent to the history as given in accompanying clinical notes by Dr. Allworthy, the patient became cachectic and gland tumours developed.

Death occurred about a year after the last photograph was taken on March 6, 1900. The histological notes, by Mr. Pernet, are very interesting. He concludes that the case must be considered as one of multiple alveolar carcinoma of the skin, possibly originating from the sweat apparatus.

It is proposed to complete this fine Atlas in five years in fasciculi of from eight to ten plates, issued every three months.

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The Johns Hopkins Hospital Reports. Vol. X. Nos. 6, 7, 8, 9. Baltimore: The Johns Hopkins Press. 1902. Pp. 194.

In this part four papers are contained. The first, by Dr. Charles P. Emerson, is on "Metabolism in Albuminuria." Observations were made on two cases. The author commences his paper by the statement that "it is the albuminuria which is under consideration, and that the severity of this is measured by the amount of albumin present." This seems a self-evident proposition. He goes on to say very truly: "The same cannot be said of nephritis—of this the albumin is often a poor index. . . . A small amount may prognosticate no favourable course, and the severest case may have the least." The conclusions to which the observations lead are as follow:—

"1. The percentage of albumin is the best index for the course of a case of albuminuria.

"2. In many chronic cases of nephritis there is an acute process in progress, and it is this latter which governs the course of the disease. Variations in the course of this acute process are shown by (a) increase in albumin per cent. ; (b) slight rises in temperature.

"3. The effect of various diets, therapeutic measures, muscular work, &c., on the albuminuria is often produced by their effect on this acute process.

"4. In governing the diet in nephritis slight rises in temperature should be taken as evidence that the diet is unsuited to the case.

"5. While the acute process is active milk is the best diet—not too much, and properly diluted. After the acute process has subsided the patient may even benefit from additions of bread and butter, rice, fruit, or even later, of meat.

"6. If the day and night urines be studied separately, in ad-

dition to the points observed by Quinke, Iljisch, and Laspeyres, it is found that—

- "a. The line of water excretion for the days is practically parallel to that of the night, but the changes in the night preceding gives (*sic*) the curves the appearance of being the reverse of each other.
- "b. The albumin per cent. of day urine is practically always above that of the night.
- "c. In the night urine the albumin and nitrogen lines are practically parallel, showing some definite relation between the excretion of these, and the percentage of each varies inversely as the amount of urine to a certain degree."

In the second paper Dr. MacCallum describes the *regenerative changes which he has observed in the liver of a patient who was believed to have suffered from acute yellow atrophy* some months prior to his death. The text is illustrated by four good plates.

The third paper is the work of Drs. Thomas M'Crae and James F. Mitchell. It is entitled "Surgical Features of Typhoid Fever ; being a summary of those cases with surgical features in the wards of the Johns Hopkins Hospital from June, 1900, to June, 1902, with especial reference to intestinal perforation." Two hundred and seventy-five cases were treated.

"Of these a certain number had unimportant complications, as boils or abscesses, the cultures from which in every instance yielded pyogenic cocci.

"Periostitis and perichondritis have been seen occasionally, always subsiding without surgical interference.

"Glandular affections, especially mastitis, occurred, but were not serious.

"Abscess of the liver occurred once with recovery, the cultures being practically negative.

"There have been symptoms of cholecystitis in five cases, of which three subsided without operation. One was operated upon and recovered, while in one the gall-bladder ruptured, and general peritonitis resulting in death followed. Appendicitis was suspected on admission in three cases, and developed once during the course of typhoid fever.

"Perforation of the intestine occurred eight times. Of these, seven were operated upon with two recoveries, a third dying of

toxæmia after a week. All of these seven were recognised within nine hours except two, in which hæmorrhage from the bowel accompanied the perforation. In one case operation was not advised because the patient was evidently *in extremis*.

"Exploratory laparotomy was done in two cases in which no perforation was found. In one the symptoms proved to be due to intestinal hæmorrhage; in the other to a low grade of peritonitis. The first died; the second recovered.

"Eleven cases with suspicious abdominal symptoms were not operated upon. Of these, two died, and the autopsies showed no perforation. The remaining nine recovered."

The last paper is on the "Symptoms, Diagnosis, and Surgical Treatment of Ureteral Calculus," by Dr. Benjamin R. Schenck.

In a highly practical work the author discusses all points connected with the recognition and treatment of this disease. Four patients out of 9,500 admissions to the gynæcological wards of the hospital have been operated on for ureteral calculus. These four cases and 97 cases recorded previously form the basis of the paper.

The calculi may be either primary—that is, formed in the ureter; or secondary—that is, formed in the kidney and impacted in the ureter. The latter are far the more common. The seat of impaction is most frequently one of the three points where there is diminution of calibre of the tube—(1) three to six c.m. from the kidney; (2) where the ureter crosses the iliac artery; (3) where it passes through the wall of the bladder. It would seem that, although renal calculus is more common in men, impaction in the ureter is more common in females, due probably to the anatomical relations of the pelvic portion of the ureter in women.

A very careful account of the symptoms of impacted calculus is given.

In the chapter on diagnosis the value of cystoscopy is insisted on, and the information which may be got by catheterisation of the ureters. If the point of the catheter is topped with wax an impression of the rough surface of the stone may be got on this substance. "In three of the four cases of ureteral stone which have occurred in the gynæcological department of the Johns Hopkins Hospital, a positive

diagnosis has thus been made and the exact location of the stone established."

The treatment is, of course, mainly surgical. A very full and critical account of the different operations is given. Of 101 cases operated upon, 21 have died, making a mortality of 20·8 per cent. But from the appended tables it would appear that in the different operations the mortality varied from 100 per cent. to 7·7 per cent.

Recherches sur la Voie Acoustique Centrale (Voie Acoustique Bulbo-Mésencéphalique). Par le DR. A. VAN GEHUCHTEN. Bruxelles : Hayez. 1902. Pp. 47.

THIS valuable memoir, from the pen of one of the most distinguished investigators in the field of nervous anatomy, is published by the Belgian Royal Academy of Medicine, and was awarded a prize of 400 francs by that body.

The eighth pair of nerves is connected with the medulla oblongata by two roots—an external, superior or dorsal, and an internal, inferior or ventral. The former is constituted entirely by fibres proceeding from the cochlea, while the fibres of the internal root come from the vestibule. In the present paper Professor Van Gehuchten considers only the central connections of the external or cochlear root. The fibres of this root have their cells of origin in the spiral ganglion of the cochlea, and terminate on the antero-lateral aspect of the inferior cerebellar peduncles in the accessory nucleus and in the lateral tubercle. So far opinions agree, but there is great uncertainty as to the further connections of these grey masses. The author gives a very complete summary of the investigations which have been made on this subject, and then proceeds to his own researches, which have been made on rabbits, by the method of secondary degeneration following localised lesions. These experiments are grouped in three series, according to the seat of the experimental lesion—(a) Lesion of the trapezoid body at the level of the apparent origin of the facial nerve, in the immediate neighbourhood of the bulbo-spinal root of the trigeminus; (b) lesion involving, besides a number of fibres of the trapezoid body, on the ventral aspect of the bulb, either the fibres of the dorsal part of the trapezoid

body or the fibres constituting the medullary striæ (c) partial or complete destruction of the terminal grey masses of the cochlear nerve, in order to cause degeneration of all the fibres constituting the central path of the eighth pair. The animals were allowed to live from two to three weeks. Serial sections were made and stained by Marchi's method, the only one which, in the author's opinion, can give certain conclusions as to the path of nervous tracts in the adult. The following are the main conclusions arrived at :—

The fibres of the cochlear nerve terminate in the accessory nucleus and in the lateral tubercle—they form the *peripheral acoustic tract*.

In the accessory nucleus and the lateral tubercle commences the *central acoustic tract*. This is not a bulbo-cortical tract, but, in its ascending course towards the superior nervous centres, is interrupted in the nucleus of the lateral fillet and in the inferior quadrigeminal tubercle, constituting in this way an *acoustic bulbo-mesencephalic tract*. This tract is double, consisting of a ventral and of a dorsal part.

The *ventral acoustic tract* proceeds from the accessory nucleus ; it forms all the trapezoid body, then, further on, the arciform fasciculus, and terminates in the superior nucleus of the lateral fillet.

The *dorsal acoustic tract* proceeds from the lateral tubercle ; it is independent of the trapezoid body, passes the raphé in its posterior half, forms an ascending bundle behind the olivary masses of the opposite side, enters into the constitution of the lateral fillet, and can be followed to the ventral part of the nucleus of the inferior quadrigeminal body.

The trapezoid body, the medullary striæ, and the corresponding part of the lateral fillet are formed for the most part, if not entirely, of neurons of the second order .

The connections between the degenerated dorsal and ventral fibres and the different masses of grey matter placed along this bulbo-mesencephalic path could not be determined, nor the part which the cells of these grey masses take in the constitution of the trapezoid body and lateral fillet ; but it was proved that there were no commissural fibres uniting the accessory nucleus and the lateral tubercle of one side with the corresponding grey masses of the opposite side.

The acoustic path, traced thus in its bulbo-mesencephalic part to the inferior part of the mesencephalic, must be continued, probably by a new set of fibres, to the cerebral cortex, as the *acoustic mesencephalo-cortical tract*. This part of the path has not yet been traced by the method of degeneration. More or less complete destruction of the inferior corpora quadrigemina gave rise to no ascending degeneration. These latter experiments were made when the author believed, with other anatomists, that the inferior quadrigeminal bodies were the termination of all the acoustic fibres of bulbar origin. But now it has been shown that the fibres of the trapezoid body do not pass the superior nucleus of the lateral fillet, while the fibres of the medullary strice terminate in the subjacent grey mass. It is by destruction of these grey masses that the further course of the acoustic path must be sought. The results of these researches are promised in a subsequent memoir.

The text of this important contribution to anatomy is illustrated by twenty-nine plates, containing sixty-three figures.

Studies from the Institute for Medical Research, Federated Malay States. No. 1. Vol. I. The Malarial Fevers of British Malaya. By HAMILTON WRIGHT, M.D. (M'Gill). London: J. & A. Churchill. 1902. Pp. 98.

THE great interest taken at present in tropical diseases, and particularly those due to malaria, will insure a welcome for the observations contained in this work. The part before us comprises five papers, all dealing with malarial disease as observed in the British portions of the Malay Peninsula. The first, and much the longest, of these, by the Director of the Institute for Medical Research, Dr. Hamilton Wright, gives a general account of the malarial fevers of British Malaya. The types of parasites found include four or perhaps five of the known parasites of human malaria. Of 251 cases examined, 93 were malignant tertian, 78 benign tertian, 56 quartan, 22 pigmented quotidian, 2 unpigmented quotidian. This is considered to fairly represent the proportions in which the different fevers occur in British Malaya. A description of

the different parasites follows. The cases of fever occur mainly among the native population. The European quarters in the large centres of population are practically free in spite of the presence of myriads of *Anopheles*. This is because the mosquitoes have not an opportunity of becoming infected. In the case of the natives things are very different. Their filthy habits, their over-crowded houses, their ignorant refusal to use mosquito nets, and their habit of spending a great part of the night in the open air, all contribute to their infection. This infection is due to *Anopheles*. "In all centres of native population infected *Anopheles* are present, and the disease is by them chiefly propagated. Where the search is thorough I have rarely failed to find one or two in every ten or fifteen with blasts in their veneno-salivary glands or zygotes in their body cavity." It is interesting to learn that in mangrove swamps, where, although *Culex* abound, *Anopheles* are absent, malarial fevers are non-existent. Valuable suggestions are made as to the prevention of malarial fevers. The measures proposed are of the usual kind—filling up of stagnant pools, clearing away of jungle and trees, mosquito nets and protected houses, and use of quinine. In Malaya, owing to the enormous rainfall, the use of kerosene oil to kill the *Anopheles*' larvæ is futile. It would be cheaper to fill up the pools. The writer is no believer in quinine as the cause of blackwater fever. He has not met with any cases of this disease in Malaya. The remainder of his paper is a record of cases.

In the second paper Dr. R. M. Connolly gives an account of a case of pernicious malarial fever. Such cases are rare. That the opening up of new earth is a cause of malarial fever is a commonly received opinion. In the third paper Dr. W. R. C. Middleton describes an outbreak of fever which might have been attributed to this cause, but which he shows was due to the introduction of infected labourers and the spread of the disease from them to others by the agency of *Anopheles*.

The fourth paper, by Dr. E. A. O. Travers, discusses the treatment of malarial fevers. Main reliance is placed on quinine. In ordinary cases this is given by the mouth, but in more urgent instances intramuscular, or even intravenous, injection is recommended. Subcutaneous injection of quinine should never be practised.

In the last paper Dr. M. Watson reports on the fevers met with in the Klang district, which do not appear to present any very remarkable features.

The text of the papers is illustrated by numerous temperature charts.

Tropical Diseases: a Manual of the Diseases of Warm Climates.

By PATRICK MANSON, C.M.G., M.D., LL.D. (Aberd.), F.R.C.P. Lond., F.R.S.; Foreign Associate of the Académie de Médecine, France; Honorary Member of the Société de Médecine de Sand; Physician to the Seamen's Hospital Society; Lecturer on Tropical Diseases at St. George's Hospital, Charing Cross Hospital, Medical Schools; Lecturer in the London School of Tropical Medicine; Medical Adviser to the Colonial Office and to the Crown Agents for the Colonies. With 130 Illustrations and two coloured Plates. New and revised Edition. Cassell & Co., Limited, London, Paris, New York and Melbourne. MCMIII. 8vo. Pp. xxiv. + 756.

THE occasions are not many upon which we are justified in expressing our unqualified approval of a medical work submitted for review. The present is such an occasion. We have nothing but praise for this new and revised edition of Dr. Patrick Manson's "*Tropical Diseases.*" The first edition of the work was published in April, 1898. It was reprinted in June and September of the same year, and again in the following year. A revised and enlarged edition was issued in June, 1900, and reprinted in the following November. And now the third edition lies before us, published in March of the present year. Surely this is a sufficiently encouraging and successful record.

In his preface Dr. Manson states that since the publication of the first edition of his "*Manual*" in 1898 tropical medicine has undergone a remarkable development. He attributes this result to the recent establishment of Schools of Tropical Medicine in Great Britain, France and Germany, to the despatch of Commissions appointed by home and foreign Governments and institutions with the

object of clearing up particular points in relation to tropical diseases, to the institution of a Tropical Section at the annual meetings of the British Medical Association, and to an increasing interest in several recent discoveries shown by the general public. But, in our opinion, Dr. Manson's "Manual," with its clear, trenchant, yet scientific descriptions of disease, has had much to say to the development of a "phenomenal activity in the study of tropical disease and a corresponding advance in our knowledge."

As examples of what has been accomplished during the last five years, Dr. Manson points out the installation of the mosquito as a leading factor in tropical pathology, the establishment of the mosquito-malaria theory, the discovery of the relationship of this insect to yellow fever, the discovery of the precise way in which *Filaria nocturna* is inoculated by the mosquito, the discovery of trypanosomiasis in man, and the revealing of an unsuspected route by which *Ankylostomum duodenale* may get access to the human intestine. The treatment of the grave condition induced by the presence of the last named parasite is fully discussed in the chapter (XLIII.) on "Intestinal Parasites." The advantages and dangers of the administration of thymol as an anthelmintic in ankylostomiasis, a remedy which was introduced by Bozzolo in 1880, are clearly set forth at pages 656 and 657.

The foregoing examples will show the reader what an important contribution to medical literature Dr. Manson has made. In these days of rapid and distant travel many dwellers in temperate climes are from time to time exposed to infection by tropical diseases of bacterial or protozoal or parasitic origin. Most of us have near relatives serving their country in warm climates. Hence the very real and living interest which a tale well told of tropical diseases must have for all of us—and such is Manson's "Manual of the Diseases of Warm Climates."

Guy's Hospital Reports. Vol. LVII. 1902.

As usual Guy's Reports contain much valuable matter, One of the most important papers is by H. A. Gaitskell, M.D.,

ON "The Condition of the Blood in Pneumonia, together with some Records of Blood Examinations during the Healing of Wounds." A. D. Fripp, F.R.C.S., and R. H. Jocelyn Swan, M.B., describe a case of that rare disease sarcoma of the tongue, and give a useful summary of the forty-three previously recorded cases. E. I. Claxton, B.S., deals with the gelatin treatment of aneurysm, and comes to these conclusions amongst others—that the method is an exceedingly dangerous one and apt to result in death from tetanus, and that in no case has there been any cure.

Another volume is promised in the autumn.

Burdett's Hospitals and Charities, 1903. By SIR HENRY BURDETT, K.C.B. London: The Scientific Press. 1903 8vo. Pp. viii. + 1119.

THIS volume is well described on the title page as "The Year Book of Philanthropy and the Hospital Annual." It is a monument of industry and research on the part of Sir Henry Burdett and his coadjutors.

It may be considered to be divided into three parts—first, an index of the names of institutions connected with hospital work at home, in the colonies, and in foreign countries; secondly, a section consisting of thirteen chapters on various topics relating to hospitals; and thirdly, a Directory of Institutions, which is simply invaluable as a work of reference.

The subjects discussed in the thirteen chapters include the general outlook for British hospitals, the administration of a large hospital; home and foreign missions and their general charities; orphanages, homes and refuges; convalescent homes, and institutions for the blind and deaf and dumb; hospital construction in 1902; the nursing department and its cost; "Hospital Sunday" and "Hospital Saturday;" the hospital question in the United States, Canada, Australasia and India; hospital finance—income and expenditure in 1902; the cost of hospital management, and of in- and out-patients' maintenance.

Taken as a whole, "Burdett's Hospitals and Charities" is a work of reference which is indispensable to all who

are actively interested in the care of the sick poor. We are sorry to see that no return has been made by several Dublin hospitals, although repeated applications for information have been made to the respective hospital authorities. In the case of St. Vincent's Hospital and of St. Michael's Hospital (Kingstown) we are told that "information is not obtainable"—why?

The Royal University of Ireland. The Calendar for the Year 1903. Dublin: Alex. Thom & Co. 1903. 8vo. Pp. 519. Examination Papers, 1902. A Supplement to the University Calendar for the Year 1903. Dublin: Ponsonby & Weldrick. 1903. 8vo. Pp. 766.

THESE volumes, so indispensable to all undergraduates, actual or prospective, of the Royal University of Ireland, have been published in fairly good time in the present year. The manner in which they have been issued reflects much credit on their respective publishers.

The changes in the Courses and in the Regulations for the year 1904 will be found at page 203 of the Calendar, those relating to Medicine at page 231.

In future, Pathology will cease to form part of the course for the Travelling Medical Scholarship in Anatomy and Histology, but embryological specimens may be used at the oral examination.

A new Medical Studentship, of the annual value of £200, and tenable for two consecutive years, will be offered for competition among the graduates in Medicine of the University in October, 1904. Candidates must answer in Pathology and Bacteriology. Particulars of the scope of the examination are given at page 235.

Colonial and Camp Sanitation. By GEORGE VIVIAN POORE, M.D. London: Longmans, Green & Co. 1903. Pp. 43.

THIS handbook practically consists of extracts from his well-known larger works, and is designed to help dwellers in remote parts of the Colonies, where water supply, drainage, &c., have to be improvised by each householder. It is clearly written

and well illustrated, and with great self-restraint the author gives only the useful minimum. Several of his plans, such as the straw grease trap, are admirably simple and efficacious.

A System of Physiologic Therapeutics: a Practical Exposition of the Methods, other than Drug-giving, useful in the Prevention of Disease and in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D.; Professor of Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine at Jefferson Medical College; Physician to the Philadelphia Hospital, and the Rush Hospital for Consumption; &c. Vol. IX. Hydrotherapy, Thermotherapy, Heliotherapy, and Phototherapy. By DR. WILHELM WINTER NITZ, Professor of Clinical Medicine in the University of Vienna; Director of the General Polyclinic in Vienna. Assisted by DR. ALOIS STRASSER, Instructor in Clinical Medicine at the University of Vienna; and DR. G. BUXBAUM, Chief Physician of the Hydrotherapeutic Institute in Vienna. On Balneology and Crunotherapy. By DR. E. HEINRICH KIRSCH, Professor in the University of Prague; Physician at Marienbad Spa. Translated by AUGUSTUS E. ESCHNER, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic, &c., and with Notes on American Springs, by GUY HINSDALE, A.M., M.D. Including Special Chapters on the Classification of Mineral Waters and their Distribution in the United States. By A. C. PEALE, M.D.; Aid in the National Museum, Washington, D.C., in charge of Mineral Water Statistics of the United States Geological Survey. On the Practice of Phototherapy and Thermotherapy. By J. H. KELLOGG, M.D., of Battle Creek, Michigan. On Saline Irrigation and Infusion. By HARVEY CUSHING, M.D., of Johns Hopkins Hospital, Baltimore; also an Appendix by the Editor. Illustrated. London: Rebman, Ltd. 1902. 8vo. Pp. 570.

THE contents of this volume fully maintain the high scientific standard of its predecessors in this unique encyclopædia of the Natural History of Scientific Medicine. Some of the sections are very specially interesting at the present date; dealing, as they do, with the problems and results of some of the most

recent means and methods of "Physiologic Therapeutics"—notably those which fall under the headings of "Heliotherapy," "Phototherapy," and "Crounotherapy." The thrilling effects of the discoveries of recent years in the department of "Radio-activity," the startling revelations of the "Röntgen-rays," the more recent investigations on the "Becquerel-rays," and the now fairly well established curative properties of the "Finsen-rays," will, we feel sure, send all inquiring readers to the pages which deal with the subject of "radiant" therapeutics. And we can promise them with confidence that they will not be disappointed; we certainly, for our own part, were not. All the data which theory and experiment have hitherto placed before the scientific world on these most important, as well as most interesting, subjects will here be found collected for the benefit of the reader, presented in the clearest light, and elucidated with the most instructive comment. We have ourselves perused this volume, and especially the sections to which we have referred by name, with the keenest interest and pleasure; and we feel that we are but fulfilling a very plain duty in recommending all our readers to go and do likewise. We believe that the term "*Crounotherapy*"—for internal medication by mineral waters—now appears for the first time. The credit of the coinage is given to Dr. David Riesman, of Philadelphia. The fullest and most scientific information on this important department of therapeutics is here given. Comparative analysis of the most important springs throws, of course, great light on the *rationale* of their action. We notice that the *Salvator Springs* of Northern Hungary, which have of recent years won a very high reputation in the treatment of gastric and renal derangements, are exceptionally rich in salts of *lithium* and *boron*, and contain but a very small quantity of sodium bicarbonate.

Catechism Series. Histology. Edinburgh: E. & S. Livingstone. 1903. Pp. 96.

HISTOLOGY is a difficult subject with which to deal in a mere "Catechism." Nothing that a student can read will make up for practical work in the Histology Room. We must, however, admit that the ninety-six pages which are filled

with questions and answers on "the minute structure of the human body, as revealed by the microscope," are likely to prove a great help to the conscientious student of histology.

Diet and Food, considered in relation to Strength and Power of Endurance, Training and Athletics. By ALEXANDER HAIG, M.A., M.D. Oxon., F.R.C.P.; Physician to the Metropolitan Hospital, and the Royal Hospital for Children and Women; Author of "Uric Acid as a Factor in the Causation of Disease." Fourth Edition. With Seven Illustrations. London: J. & A. Churchill. 1902.

DR. HAIG has long since established his position as a well-recognised authority on some of the most important questions relating to the nutrition of the human body—normal and abnormal, physiological and pathological. The fact that we are now called upon to notice the fourth edition of the small volume lying before us, of which the first bears a date of but five years previous, forms incontrovertible testimony to the appreciation of his views by the reading public of our profession. The central importance of Dr. Haig's general view in this connection is clearly focussed in his own statement of his opinion: "That in hospital work, where there is no selection of cases, something like seventy-five per cent. of the sorrow and suffering which I, as a physician, am asked to relieve, could have been prevented by exclusion of the poisons. Yet, only too often, when it comes before us it is too late, and fatal damage of structure cannot be repaired." Dr. Haig argues well and clearly throughout all the pages of the present volume to the establishment of the conclusion that the physical and mental worry of such seventy-five per cent. of human sufferers could have been absolutely anticipated and prevented by due regulation of the diet and digestive functions. He emphatically informed his readers in the preface to the first edition of the present work that: "Diet, as at present used, is often the product of a vast amount of ignorance; it is the cause of a hideous waste of time and money; it produces mental and moral obliquities, destroys health and shortens life, and generally quite fails to fulfil its proper purpose." The indictment is a sweeping one; but it is well supported by Dr.

Haig's facts, and by the forcible scientific reasoning which he bases thereon. His views still remain apparently as unchangeable as the laws of the Medes and Persians. As expressed in a fourth edition, they are already too well known to most of our readers to require detailed criticism. To those who have not yet studied the important questions here discussed, we should emphatically say that it is their duty to do so with the least possible delay.

TWO SCOTTISH WORKS ON OBSTETRICAL SUBJECTS.

1. *Abdominal Manipulation in Pregnancy.* By ALEXANDER MACLENNAN, M.B., C.M. (Glasg.) ; L.M. (Rotunda Hospital) ; Clinical Assistant to the Professor of Obstetrics and Gynaecology, University of Glasgow ; Extra Dispensary Surgeon, Western Infirmary ; &c. With an Introduction by PROFESSOR MURDOCK CAMERON. Pp. x. and 245. Illustrated. London : Rebman, Ltd. 1902.
2. *Clinical Obstetrics.* By ROBERT JARDINE, M.D., M.R.C.S. ; Senior Physician to the Glasgow Maternity Hospital ; Examiner in Midwifery to the University of Glasgow ; Late President of the Glasgow Obstetrical and Gynaecological Society, &c., &c. Pp. xxvii. and 657. With 47 Illustrations. London : Rebman, Ltd. 1903.

THE University of Glasgow may be congratulated on the two very excellent works on obstetrical subjects that have been lately produced by her sons.

1. Dr. MacLennan's short monograph on abdominal manipulation in pregnancy deals with a most interesting subject, and one which is of great practical importance. It has not, however, received a sufficiently comprehensive title, as it treats of matters which can scarcely be included under the term abdominal palpation, and, moreover, treats of parturition and the puerperium as well as of pregnancy. The importance of substituting external for internal manipulation in the diagnosis and management of pregnancy and labour must be apparent to anyone who has seen the many unnecessary cases of long-continued illness and even death that result from the introduction of septic organisms into the vagina or

uterus. The possibility of such substitution will in many cases be conceded by all modern obstetricians, but, perhaps, not quite to the extent Dr. MacLennan states; still the over-confidence of the writer is a fault on the right side. Appended to the book there is an excellent bibliography, which will be of the greatest use. It would, however, be well if a little more attention had been paid to correcting the spelling of the names of the various authorities.

Dr. MacLennan discusses at some little length the question as to whether the Dublin method or Credé's method is the correct term for denoting the procedure by which the expulsion of the placenta is effected by external manipulation. He is perhaps a little inclined to confuse the question at issue, which is not to our mind a question of what exact course was recommended by Credé or by the Dublin School. The question is a much wider one, and is--Where was the method of removing the placenta by external manipulation as opposed to its manual removal or removal by traction on the cord first practised and taught? And the answer, we consider, is undoubtedly in favour of Dublin.

We heartily congratulate Dr. MacLennan on his book, and recommend it with confidence to both specialists and general practitioners.

2. Professor Jardine's book is of a more general nature, and embraces the entire subject of clinical obstetrics. We may at once say that we consider it an admirable work, and one which leaves little to be desired save the addition of a proper supply of illustrations. The teaching it contains is practical and modern, and is described in language that renders it easy of comprehension. The book ends with the statistics of the Glasgow Maternity Hospital from 1869 to 1898, in both the intern and the extern department. The intern statistics are in a way remarkable, and if we read them aright do not altogether reflect unmixed credit on the management of the hospital. We may, however, preface our remarks by saying that it is most difficult to follow the tables, as the headings of the different columns have been omitted.

As we read the tables we understand that in the last thirty years, whereas 3,202 married women were confined in the hospital wards, 6,976 unmarried women were confined.

This will appear an astonishing thing to anyone accustomed to an Irish maternity hospital. That the unmarried state has no prejudicial effect on the mortality is shown by the fact that of the 3,202 married women 107 died, while of the 6,976 unmarried women only 106 died. More serious and more important than the civil status of the patients is the high death-rate amongst the cases confined in the hospital. Out of a total of 4,322 cases confined between 1889 and 1898, no less than 99 died, or a little over 2 per cent.; and further, out of a total of 1,563 married women confined during the same period 69 died, or a little over 4 per cent. Of the total number of deaths, 44 were due to sepsis, 19 to eclampsia, and 6 to placenta prævia; of 45 cases of placenta prævia 6 died, or more than 13 per cent. It is interesting to compare these figures with those of another maternity hospital. At the Rotunda Hospital, between 1889 and 1896—i.e., practically the same period—8,997 patients were confined, and of these 66 died, or 0·73 per cent. Of the total number of deaths, 17 were due to sepsis, 11 to eclampsia, and 1 to placenta prævia; of 55 cases of placenta prævia 1 died, or less than 2 per cent. In spite of the difference in the results obtained in placenta prævia, the treatment recommended by Dr. Jardine is practically the same as that adopted at the Rotunda Hospital, save that Dr. Jardine evidently considers that the vaginal plug is frequently necessary, while at the Rotunda Hospital it is seldom or never used. We saw some 32 cases of this condition treated in the intern maternity and perhaps half that number in the extern maternity, but we never saw a case that required plugging or a death.

Space forbids us to criticise Dr. Jardine's book or his statistics at greater length. We do not like the statistics, but for the book itself we have nothing but praise, and can thoroughly recommend it.

Atlas and Epitome of Diseases of the Mouth, Throat, and Nose. By DR. L. GRÜNWARD, of Munich. Edited, with additions, by JAMES E. NEWCOMB, M.D. Philadelphia and London: W. B. Saunders & Co. 1903. 8vo. Pp. 225.

THIS is one of a series of Atlases well known in Germany and covering a variety of subjects, and is a translation from the

second German edition. The series is so well known and their general excellence so much thought of that it is not necessary to give full details of this book's contents, and it will suffice if a few of its leading characteristics are mentioned. The first portion of the volume is devoted to the illustrations and the short notes of description, which are clear and ample to indicate what the picture is intended to teach, without being so long as to weary the reader. The illustrations are the same as in the German edition, and are artistically and faithfully coloured. The latter part of the work is a short treatise on the diseases of these regions, and is compiled under the headings of groups of diseases, such as acute affections, chronic ones, &c., rather than under each separate disease.

The text is easy to read, and gives a very fair idea of the subjects considered. Some accounts of operative procedures are given, but these must be looked upon as too short to be of much help to anyone not already familiar with the technique of this class of work. Unfortunately, in some of the drawings illustrating these procedures the instruments are placed as if there were no such things as nasal bones.

The Treatment of Fractures. By CHARLES LOCKE SCUDDER, M.D.; Assistant in Clinical and Operative Surgery, Harvard University Medical School; Surgeon to the Out-patients' Department, Massachusetts General Hospital. Third Edition, thoroughly revised, with 645 Illustrations. Philadelphia and London: W. B. Saunders & Company. 1902. Pp. 485.

In the number of this Journal for November last (Vol. II., page 369, *et seq.*) will be found an extensive review of the second edition of this important work. In it we drew attention to the short time that elapsed between the first appearance of the book and the demand for a second edition as an evidence of the popularity the work enjoys. We did not then know that a third edition had been demanded, and was actually being issued.

The most important change in the present edition is to be found in the chapter on gunshot fractures of bone, in con-

nection with which the experience of Mr. Makins in South Africa, as published in his book, has been largely utilised.

It is unnecessary to add anything further to what we stated in the review so recently published of the previous edition, unless to congratulate the author on the popularity of his work.

Supplement to the Thirty-eighth Detailed Annual Report of the Registrar-General of Marriages, Births and Deaths in Ireland. Special Report on Cancer in Ireland; with Statistical Tables, and Observations as to the Prevalence of the Disease; also Notes on the History of Cancer Cases. Presented to both Houses of Parliament by Command of His Majesty. Dublin: Cahill & Co. 1903. Folio. Pp. 46.

MR. ROBERT E. MATHESON, Registrar-General for Ireland, is to be congratulated upon the zeal and public spirit with which he has collected information on the subject of cancer as it affects the population of Ireland.

The topic of the mortality from this dread disease was specially treated in the Registrar-General's Annual Report for 1900, but Mr. Matheson has pursued the matter further, and in the Special Report before us has embodied in a series of Tables valuable additional information, together with notes of the history of cancer cases, for which he acknowledges his indebtedness to the local Medical Registrars throughout Ireland.

During the year 1901 cancer caused 2,893 deaths in Ireland; in 1900 the number was 2,717. The deaths in 1901 represent a rate of 6.5 per 10,000 of the estimated population, and give an increase of 0.4 per 10,000 living, as compared with the rate for 1900.

The steady increase in the recorded mortality from cancer in all three portions of the United Kingdom is very remarkable. In Ireland, in 1864, the first year in which the registration system was in force, the rate of mortality from cancer was 2.7 per 10,000 living. In 1871 it had risen to 3.2; in 1881 to 3.7; in 1891 to 4.6; and, as already stated, in 1901 it reached 6.5.

In England (including Wales), in 1864, the rate was 3.9.

In 1871 it was 4·2 ; in 1881, 5·2 ; in 1891, 6·9 ; and in 1900 it had risen to 8·3.

In Scotland, in 1864, the rate was 4·3 ; in 1871 it was 4·4 ; in 1881, 5·2 ; in 1891, 6·8 ; and in 1900, 8·0.

A diagram shows in a striking and graphic way the rates for the three Kingdoms during the period from 1864 to 1901 inclusive.

Nor is the increase in the mortality from cancer confined to the United Kingdom. The Registrar-General shows this by a Table (I.) which gives the death-rates from this disease in various foreign countries and cities on both sides of the Atlantic during each of the ten years 1891-1900. For the actual figures we must refer the reader to the Report itself, pages 6 and 7.

To return to Ireland, we find a remarkable disproportion between the sexes as regards deaths from cancer. In 1901, the total deaths from this cause (2,893) consisted of 1,296 deaths of males and 1,597 deaths of females. The male deaths represent 45 per cent., while the female deaths represent a percentage of 55.

In males, during 1901, the parts of the body most frequently affected with fatal results were—the stomach, 390 deaths ; the liver and gall-bladder, 155 deaths ; rectum, 89 ; intestine, 68 ; lip, 63 ; and neck, 61. In females, cancer of the stomach caused 363 deaths ; of the breast, 265 ; of the uterus, 237 ; of the liver and gall-bladder, 191 ; of the intestine, 68.

There is a curious difference between the sexes as to the age at which cancer proves most fatal. As regards males, the age period 75 years and upwards yields the highest proportion of deaths from this disease per 10,000 living of the same age—namely, 38·16. The rate for the age period 65 years and under 75 was 36·24 ; and that for the age period 55 years and under 65 was 24·94 per 10,000 living. The highest mortality amongst females was in the age period 65 years and under 75, the rate for which was 36·77 per 10,000 living ; the rate for those aged 75 years and upwards being 34·19, and for those aged 55 and under 65 years, 25·33 per 10,000 living.

The distribution of the disease by counties in Ireland is noteworthy. The proportion of deaths from cancer is lowest

in the County of Kerry, where the rate is only 2·63 per 10,000. On the other hand, in four counties the rate is between 7 and 8—viz., Meath, 7·06; Monaghan, 7·30; Tyrone, 7·33; and Carlow, 7·42. In two it is between 8 and 9—viz., Londonderry, 8·24; and Dublin, 8·48; while the highest rate, 10·47, is for Armagh. A coloured map of the County Armagh, prepared on a scale of four miles to an inch by the Ordnance Survey Office, Phoenix Park, Dublin, shows the boundaries of the Poor Law Unions, and the Registrars' Districts, as well as the average annual rate per 10,000 of the population represented by the deaths from cancer in each Registrar's District during the 5 years 1897–1901.

The remainder of this important Report is devoted to observations by the Registrars of Births and Deaths in County Armagh relative to the prevalence of cancer in their respective districts, and to notes of cancer cases furnished by the Registrars of Births and Deaths in all parts of Ireland, and also by physicians and surgeons in charge of hospitals, and other medical practitioners. Some of the notes are very suggestive. The value of others is impaired by the use of the words "alleged," "stated," "the relatives say," "appears," and so on.

At page 39 the Registrar-General gives the following summary of facts based on the observations and notes submitted to him in reply to a memorandum asking for statistics of cancer. These are the facts:—

1. That in many cases cancer recurs in the same family: grandparents, parents, and other relatives of the person affected, having suffered from that disease.
2. That frequently where a member of a family is afflicted with cancer, other members of the family suffer from tuberculosis.
3. That in a number of instances where members of a family are afflicted with cancer, other members of the family suffer from lunacy, idiocy, or epilepsy.
4. That in several cases cancer has appeared where there is a history of syphilis.
5. That in some cases the disease has occurred in persons who have been in direct contact with cancer patients.
6. That the disease has manifested itself in individuals who have used the tobacco pipes of persons suffering from cancer of the lip.

7. That in some instances more than one case of cancer has occurred amongst different families living in the same house, or amongst successive occupants of the same house.

8. That in a few cases the disease has appeared in different houses in the same locality about the same time.

9. That cancer not infrequently appears after wounds and injuries.

10. That in some cases cancer has supervened where there has been irritation of the lip consequent on smoking clay pipes.

11. That cancer frequently shows itself where unfavourable conditions as to residence, food, &c., exist.

The Registrar-General points out that it would not be within his province to pursue the inquiry further, and to discuss the question how far these facts affect the various theories which have been propounded with respect to the origin and spread of cancer. We join with him, however, in expressing the hope that the statistical information contained in this most valuable Report may prove of service to those who are engaged in endeavouring to solve the great problem of the origin and prevention of cancer—that fell and terrible disease which, in the words of His Majesty the King, has, up till now, baffled “the scientific and medical men of the world.” With the King also we may well say to our professional brethren in all parts of the earth: “God grant that before long you may be able to find a cure for it, or check its course.”

Cancer and Other Tumours of the Stomach. By SAMUEL FENWICK, M.D., F.R.C.P., Consulting Physician to the London Hospital; and W. SOLTAU FENWICK, M.D. Lond., M.R.C.P., Senior Physician to the London Temperance Hospital, Physician to the Evelina Hospital for Sick Children. London: J. & A. Churchill. 1902. Pp. 362.

THE book is divided into two parts, the first of which deals with carcinoma, while the second is devoted to a consideration of the various other tumours which affect the stomach and the duodenum. The general description of the morbid anatomy of the malignant disease is based upon the *post-mortem* records of 3,679 cases collected from different sources,

while the more special phenomena connected with its pathology are derived from an analysis of 265 cases which were examined after death at the London Hospital and the London Temperance Hospital. The first two chapters are devoted to the pathology of carcinoma, including the morbid anatomy of the disease itself and its complications. Suffice it to say that this description is accurately and carefully done. The chapters on the ætiology, symptomatology, physical signs, clinical varieties, cause, duration, prognosis and diagnosis are wanting in no respect as regards detail, accuracy and clearness. Chapter X. is devoted to a consideration of the treatment, and, as one would naturally expect, does not occupy many pages, considering that the authors are physicians. Three and a half pages are devoted to the surgical treatment. In considering surgical intervention, the authors state the case fairly from the physician's point of view. They state that "it must be borne in mind that the responsibility of recommending surgical interference, as well as the results that may be expected to accrue from it, depends almost entirely upon the accuracy of the diagnosis"; "if he waits until the nature of the disease can be determined beyond dispute, all hope of cure by the knife will have disappeared." The risk of an exploratory laparotomy in the hands of an accomplished surgeon is practically nil, a fact which ought to be known to every modern physician. Surely, then, when the risk of performing an exploratory laparotomy for diagnostic purposes is nil, it should be more frequently resorted to, so that a radical operation might be undertaken when the patient is in a better condition for an extensive operation and while the prospects of complete cure are still favourable. The following sentence occurs in this connection:—"Lastly, he (the physician) must consider the financial and domestic concerns of his patient, and determine whether the prospect of a prolongation of life or the relief which may be afforded to the symptoms is likely to compensate for the extra danger and expense incurred." With all due respect we do not think any physician has a right to constitute himself a judge as to whether the prospect of prolongation of life and relief from suffering are compensation for the danger and expense incurred. The physician's duty should end with a clear and

unbiassed statement of the exact position of the surgery of the stomach of the present day, putting the prospects of prolonged life or relief from suffering before the patient as well as the inevitable result if surgical interference is not undertaken, and leave the decision to the patient. In order to be able to do this fairly and truthfully the physician must make himself acquainted with the exact position of the surgery of the stomach from time to time, and, at present, the prospects of surgical interference in the case of gastric carcinoma, when seen in an early stage, are not by any means so gloomy as they were even five years ago.

The second part of the book, devoted to the rarer tumours, such as sarcoma of the stomach and duodenum, pedunculated tumours of the stomach, and concretions, such as hair-balls and gastroliths, as well as syphilis of the stomach, is alike interesting and instructive.

As a work of reference in connection with the subject with which it deals the book is, in our opinion, the best in the English language.

Operative Surgery. By HERBERT WILLIAM ALLINGHAM, F.R.C.S.; Surgeon to the Household of His Majesty the King; Surgeon-in-Ordinary to His Royal Highness the Prince of Wales; Senior Assistant Surgeon and Lecturer on Operative Surgery at St. George's Hospital; Consulting Surgeon to the Surgical Aid Society; Late Surgeon to the Great Northern Hospital; Late Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum. London: Baillière, Tindall & Cox. 1903. Pp. 367.

THE author, in this nicely got-up little book before us, makes no pretence to give lengthy descriptions or to mention all the operations in surgery. The idea is to give simply a brief account, with special attention to the important points of these procedures which the author believes to be the best in the various regions. On reading over the book we are of the opinion that it would be impossible for anyone unacquainted with operative surgery to perform successfully any operation from the description given. As a book for students, then, we could scarcely recommend it, unless used in conjunction with

some more pretentious book, when, indeed, it may be said its use will be uncalled for; still many practical points are emphasised in the memoranda given after each operation. The multiplicity of books which are being issued recently—some good, some passable, and some, we hesitate not to say it, bad—reminds us of the biblical saying: "Of making many books there is no end; and much study is a weariness of the flesh." The illustrations are numerous and original.

Wild Oats: A Sermon in Rhyme. By MAURICE C. HIME, M.A., LL.D.; sometime Head-Master of Foyle College, Derry. London: J. & A. Churchill. Dublin: Wm. M'Gee. 1903. Pp. 50.

"To each of my dear Old Boys with ever grateful remembrance of the innumerable kindnesses that I received from one and all of them during my thirty years' Head-mastership, I dedicate this Sermon—my first attempt at English verse composition"—such are the words with which Maurice C. Hime launches his "Sermon in Rhyme."

In the terse, impressive, well-balanced 350 lines to which the poem runs, Dr. Hime thoroughly exposes the fallacy which underlies the "Wild Oats" theory. He shows that in the course of Nature wild oats, when sown, grow and do not die—

"Wild oats once sown contaminate the ground;
Where'er they have grown, their roots may still be found."

The lesson which the author seeks to press home is embodied in lines 227-232:—

"Two ways before men lie—the Left and Right;
That leads to darkness, this to heavenly light.
Choose which you will; in both you cannot go;
Can tides at once both in and outward flow?
Sin truceless wars against the Moral Sense;
'Tis wrong to try to bridge the difference."

We trust the "Sermon in Rhyme" will fulfil the "preacher's" object. As to his earnestness and good intention there can be no doubt.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF SURGERY.

President—L. H. ORMSBY, P.R.C.S.I.
Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, March 6, 1903.

THE PRESIDENT in the Chair.

Operative Treatment of Enlarged Prostate.

SIR WILLIAM THOMSON, C.B., read the notes of five cases on which he had operated, following the method described by Mr. Freyer. The patients' ages ranged from 53 to 75. [This paper will be found at page 321.]

The Surgery of the Prostate.

SIR THOMAS MYLES read a paper in which he advocated the perineal method of reaching the prostate.

MR. MITCHELL said the subject was one of great interest. He congratulated Sir W. Thomson on the success of his operation. The great questions for the general practitioner were—(1) When should operation be recommended? (2) What is the prospect of relief? Undue frequency was due to cystitis, and was the most imperative of all indications. Rapidity of procedure was a most important element in all operations on old men. Every moment an aged patient was kept on an operating table was fraught with danger, and great danger. His own experience and that of the Northern School was in favour of the suprapubic route, but he

was very favourably impressed with the operation described by Sir Thomas Myles, and would like to have some statistics of cases actually operated on according to his method.

MR. JOHN LENTAIGNE was in favour of the suprapubic method ; he had no experience yet of the perineal, but the suprapubic was so easy he had been tempted to employ it in each of the few cases he had had an opportunity of operating on. He did not accept the statement that pneumonia after operation was always septic. He had often seen pneumonia of a severe type in other operations where the wound healed aseptically and in the most perfect manner.

SIR T. MYLES and SIR W. THOMSON replied, and the meeting adjourned.

Friday, April 3, 1903.

PROFESSOR E. H. BENNETT in the Chair.

Ulcer Treated by Excision and Grafting.

MR. R. TOBIN showed a specimen.

MR. GORDON said that he had operated on several occasions for chronic ulcer of the leg, using Thiersch's grafts. He wished to ask Mr. Tobin if he had followed up his cases for some length of time. He said this because in a case in which he (Mr. Gordon) had operated the ulceration had recurred after the patient had left hospital, and this in spite of the fact that he had kept the patient lying down for three months after the grafting operation.

The Primary Treatment of Fractures by Plaster of Paris.

After some preliminary remarks, DR. W. S. HAUGHTON described his method of applying plaster, which was a modification of the old Bavarian splint. The splint was made in two halves, like a pair of stockings, stitched along the back, into which plaster was poured, thus securing homogeneity. Thin oak chips were used to strengthen the splint. The advantages claimed were :—

- (1) *Painless treatment*, once plaster had set after reduction of deformity ;
- (2) absolute maintenance of reduction, by including joint above and below fracture ;
- (3) better results in consequence ;
- (4) in compound fractures, the method diminished discharge from wound, requiring but few dressings ;
- (5) *accessibility* for massage or other treatment deemed advisable ;
- (6) much less attention required by surgeon ;
- (7) greater ease in nursing ;
- (8) impossibility of patient doing limb any harm ;
- (9) earlier convalescence

induced by getting patients up in plaster to walk about ; (10) economy of patient's time, and, in hospital cases, of hospital's funds.

PROFESSOR BENNETT said he was glad Dr. Haughton did not use the roller bandage, as he did not approve it and thought it dangerous. He quoted Helferich's work in support of his argument.

MR. JOHN LENTAIGNE said that he had treated a large number of fractures by the immediate application of plaster of Paris during the last twenty years. In many cases he had employed the roller gauze bandage, in the meshes of which the plaster of Paris was held, and he had had none but the best results. Among his cases were more than twenty cases of compound fracture of both bones of the leg, and yet all these cases had been quickly turned into simple fractures and healed in a most satisfactory manner. The method was quite painless. If there were any pain or any evidence of interference with the circulation the splint should at once be cut off, and it then formed two lateral or antero-posterior splints quite homogeneous and in no way resembling a roller bandage as ordinarily used without plaster. The patient should also be kept under observation for forty-eight hours at least, and in applying the splint the extremity of the limb, as the toes in the case of the leg, should be left uncovered so that the circulation could be carefully watched. He had never had an accident from the use of the plaster of Paris, although he had known of very grave accidents in other hands where other methods were employed. In simple fractures his cases were generally allowed to get up in a few days.

MR. R. L. SWAN said he had watched Dr. Haughton's method at work and admired it so much that he had adopted it himself.

Carcinoma of the Larynx.

MR. PATRICK DEMPSEY read a paper on this subject. The more common early symptoms were mentioned, and stress was laid on the particular localisation of the growth. Mr. Dempsey quoted statistics showing brilliant results achieved by thyrotomy, when the disease had been diagnosed at an early stage, and read notes of a case of epithelioma of the left vocal cord in which he himself had operated twelve months previously, and in which there was no sign of recurrence.

MR. R. H. WOODS discussed the paper, and MR. DEMPSEY replied.

SECTION OF PATHOLOGY.

President—E. J. McWEENEY, M.D.

Sectional Secretary—A. H. WHITE, F.R.C.S.I.

Friday, March 27, 1903.

THE PRESIDENT in the Chair.

Adenoma of Breast.

DR. L. G. GUNN exhibited a specimen of a secreting adenoma of the breast, and showed microscopic sections.

THE PRESIDENT, DR. NEVILLE, PROFESSOR O'SULLIVAN, and the SECRETARY spoke. DR. GUNN replied.

Changes in a Rabbit's Kidney due to Experimental Intravenous Injection of Mould Spores.

THE PRESIDENT read a paper on this subject. In the course of immunising rabbits against human blood he had occasionally been compelled to make use of blood that had stood for a considerable time in the refrigerator and had become mouldy. One of the rabbits that had received injections of such blood sickened, and *post-mortem* one of the kidneys was found enlarged to four times its normal size. On section it was found to be everywhere interpenetrated with tufts and isolated filaments of fungus mycelium, with here and there what looked like attempts at the formation of sporogenous hyphæ of the *Aspergillus* type. The histological changes were interesting, and may be summarised as follows:—(1) Disappearance to a large extent of the renal parenchyma and its replacement by a fibro-blastic granulation tissue, containing numerous foreign-body giant-cells of the largest kind, and swarming with cells containing acidophil granulations of moderate coarseness, whilst others contained granules with a tendency to fix the basic dye—Ehrlich's amphophfl or B-group. These cells differed from the eosinophils of human blood in being for the most part mononuclear and fibro-blastic in type. (2) Presence of fungus hyphæ, sometimes singly, sometimes in groups of parallel or stellately arranged filaments, and sometimes in short *oidium*-like segments. The filaments were septate and provided here and there with flask-shaped or globular dilatations. Many of the shorter fungus elements were enclosed in giant-cells. They were devoid of protoplasm, and their highly-refractive cell-wall was distinctly amphophil in reaction. It did not stain selectively by Gram or Ziehl-Nielsen. Where the fungus masses were too

large to be enclosed in giant-cells they were surrounded by a necrotic zone, rich in broken-down and pyenotic nuclei, very similar to that seen in the precaseous stage of experimental tuberculosis. It was evident that the fungus was not playing the part of a perfectly indifferent foreign-body, but was exercising a necrotising influence on the tissues; yet he had been unable to satisfy himself that any growth had occurred. The filaments appeared to be quite devoid of protoplasm. The occurrence of swarms of fibro-blastic cells stuffed with coarse acidophil and amphophil granules in the immediate neighbourhood of the fungus-filaments was interesting when viewed in connection with the fact that trichinosis and other helminthiases in the human subject evoked the production of eosinophil cells; he had himself lately examined a case of *Bilharzia* disease in which most of the pus-cells contained in the urine were of that variety.

THE SECRETARY asked Professor McWeeney if he knew why the fungus lodged in one kidney only?

PROFESSOR O'SULLIVAN would be cautious in assuming that all the cell-granules referred to were eosinophil, and, in addition, asked whether the President had formed any opinion as to the variety of fungus present?

THE PRESIDENT, replying to Professor White, said that he did not know why it was that the injected fungus had lodged in one kidney only. The normal one had been examined and no fungus was found. To Professor O'Sullivan he replied that he quite recognised the distinction between the acidophil and amphophil cell-granules of rodents and the eosinophil granules of human blood. In the absence of perfect sporogenous hyphæ one could not determine the species to which the fungus belonged, but to judge by what looked like an abortive spore-head which he had found, it was most probably an *Aspergillus*.

Chromogenic Organisms.

THE PRESIDENT showed cultures of a number of these obtained in the course of various bacteriological investigations. Two belonged to the non-liquefying fluorescent group, and were remarkable, one of them for its extremely powerful fluorescent dichroism, the other for the fact that in old cultures the fluorescent green became brown near the surface of the gelatine. Another species he showed was *Cladothrix nigra* of Rossi Doria, the *Cladothrix dichotoma* of others. Its pure brown diffusible pigment was very remarkable and accounted, he ventured to think, to some extent,

for the brown colour of peaty soils which were the natural habitat of this organism. The fluorescent and brown pigments were devoid of typical spectra, but the prodigious pigment, of which he handed round a strong solution in amylic alcohol, yielded a typical and beautiful spectrum.

FETAL BLOOD IN MATERNAL TYPHOID FEVER.

JEHEE (*Wien. klin. Woch.*) reports the examination of the blood of a seven months' foetus stillborn in the fifth week of its mother's illness with typhoid fever. He found no organisms in it, and the agglutination of typhoid bacilli was much less prompt with it than with the mother's blood. In another case a five months' foetus was born in the third week of the mother's illness with typhoid fever. No bacilli were found in the foetal blood, and no Widal reaction was obtained, though the maternal blood reacted at once. In a case reported by Roulaacroix (*La Presse méd.*) the mother gave birth to twins almost at term and died of typhoid fever on the eleventh day of the disease. The mother's blood gave a positive Widal reaction, but no reaction was given by the blood of the twins.

THE CITY OF MOSCOW PRIZE.

THE City of Moscow Prize of 5,000 francs, given at the International Medical Congress to the member of the medical profession who shall be designated laureate by the Congress, has been this year given to M. Metchnikoff, of the Pasteur Institute, Paris. The second prize was given to Signor P. Grassi, of Rome.

OSTEOMYELITIS SIMULATING TYPHOID FEVER.

M. LATARJET (*Lyon médical*) reports a case of osteomyelitis which closely simulated typhoid fever. The patient, a man forty years old, was admitted to the Lyons Hospital complaining of a violent headache and great muscular weakness: his temperature gradually reached 104.5° F.; he had many watery stools daily; his pulse was small, feeble, dicrotic, and was 104; his tongue was at first broad, flabby, and covered with a soft white fur; it afterwards became dry, hard and glazed. The effects of the Widal serum test were negative. He, in time, came to complain of a severe pain in the apex of the left shoulder, and over the apex of the spine of the scapula there came a diffused red swelling, resistant on pressure. An incision made through the deltoid liberated foetid pus and disclosed scapular osteomyelitis.

CORK MEDICAL AND SURGICAL SOCIETY.

Wednesday, April 8, 1903.

P. T. O'SULLIVAN, M.D., President, in the Chair.

Specimens.

DR. C. YELVERTON PEARSON showed the following pathological specimens :—

(1) A foot, amputated by Symes' method for sarcoma. The patient was a man aged thirty-three. The disease was of two years' duration, and had recurred twice after minor operations.

(2) A large hæmatocele removed from a man aged forty-three. There was no history of injury, and the condition was present as long as the patient could remember.

(3) A fibro-myoma removed by abdominal hysterectomy from a woman aged twenty-five.

(4) A large hydatidiform mole passed by a woman aged thirty-five, who was supposed to be four months pregnant.

Sarcoma of Femur.

DR. W. ASHLEY CUMMINS showed a girl, aged seventeen, who suffered from a large swelling of rapid growth at the lower end of the left femur. The duration of the disease was only one month, as far as the patient knew. There was no history of injury. His own opinion was that the case was one of sarcoma, and that the proper treatment was immediate amputation at the hip-joint. He asked for the opinions of other members. Several members spoke and agreed with Dr. Cummins both as to diagnosis and treatment.

Epithelioma of Penis.

DR. J. COTTER showed an epithelioma of the penis that he had removed from a patient aged fifty. He said that in all cases of epithelioma of the penis that had come under his notice congenital phimosis was present.

Excision of Elbow.

DR. H. R. TOWNSEND showed a girl, aged seventeen, whose elbow had been excised for tubercular disease, and who had now perfect motion in the joint.

Skiagrams.

DR. TOWNSEND also showed the following skiagrams :—

Peculiar dislocation at the elbow-joint—outward dislocation of the radius and ulna, forward dislocation of the radius, and fracture of the capitellum, in a child aged seven.

Transverse fracture of the patella in a man aged twenty. There was no deformity, no pain, no swelling, and only partial loss of power of extension of the leg or the thigh. The condition as revealed by the skiagram came more or less as a surprise.

Fracture of the radius closely simulating Colles's fracture. A photograph of the limb was very suggestive of that condition, but the skiagram showed an unusual oblique fracture of the styloid process and a small portion of the lower end of the bone.

BACTERICIDAL ACTION OF THE GASTRIC JUICE.

SUSSWEIN (*Wiener klin. Wochensch.*) states that diphtheria bacilli have been found in the lungs, liver, spleen, kidneys, bronchial glands, central nervous system, cerebro-spinal fluid, blood, bile, and urine. Out of 146 diphtheria autopsies on diphtheria patients by Kolisko, at the St. Anna Kinderspital, in Vienna, only four cases showed gastric diphtheria, and only one of these has been found since the introduction of the diphtheria antitoxin. Susswein examined the gastric contents in eight cases of diphtheria immediately after death, in four of whom diphtheria bacilli were found, and in two of whom they were cultivated. They were not found in the jejunum nor in the intestine.

NITROUS OXIDE GAS.

In a paper on preliminary anæsthesia by nitrous oxide gas Dr. Norris (*Univ. Pen. Med. Bull.*) writes :—No matter how well ether is given there will always be a certain percentage of patients who will strain and gag, and may even vomit. This is particularly so with patients suffering from a chronic cough. Sometimes the very smell of a can of ether that is being opened in the room will produce severe vomiting in a nervous woman, who has, perhaps, taken that anæsthetic before. The use of the nitrous oxide gas in the early stage of the anæsthetisation gets rid of this trouble and less ether is necessary. The contra-indications to the use of the nitrous oxide gas as a preliminary anæsthetic are :—(1) Arterio-sclerosis ; (2) the extremes of life ; and (3) any of the contra-indications to the use of ether.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR JOHN MOORE, B.A., M.D. Univ. Dubl. ;

F.R.C.P.I. ; F.R. Met. Sec. ;

Diplomate in State Medicine and Ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS.

For four weeks ending Saturday, April 25, 1903.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending April 25, 1903, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 22·2 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,093,289. The deaths registered in each of the four weeks ended Saturday, April 25, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	April 4	April 11	April 18	April 25			April 4	April 11	April 18	April 25	
22 Town Districts	24·0	20·6	21·5	22·2	22·1	Lisburn	22·7	27·3	22·7	18·2	22·7
Armagh	0·0	6·9	27·5	20·6	13·8	Londonderry	23·9	10·1	22·7	22·7	19·9
Ballymena	28·7	38·3	19·2	14·4	25·2	Lurgan	18·3	22·1	31·0	22·1	22·1
Belfast	21·5	22·1	18·6	22·4	21·2	Newry	33·6	16·8	12·6	16·8	20·0
Clonmel	25·6	20·5	20·5	0·0	16·7	Newtownards	5·7	11·4	28·6	34·3	20·0
Cork	26·0	13·0	25·3	17·1	20·4	Portadown	15·5	5·2	15·5	10·3	11·6
Drogheda	32·7	8·2	32·7	16·3	22·5	Queenstown	46·1	6·6	13·2	19·8	21·4
Dublin (Reg. Area)	27·1	23·7	24·5	24·8	25·0	Sligo	19·2	14·4	0·0	9·6	10·8
Dundalk	19·9	8·0	31·9	27·9	21·9	Tralee	15·9	10·6	5·3	26·4	14·6
Galway	31·1	11·7	15·5	35·0	23·3	Waterford	17·5	23·4	9·7	25·3	19·0
Kilkenny	19·7	24·6	29·5	19·7	23·4	Wexford	18·7	42·0	14·0	28·0	25·7
Limerick	26·0	13·7	23·2	12·3	18·8						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, April 25, were equal to an annual rate of 1·3 per 1,000, the rates varying from 0·0 in sixteen of the districts to 11·4 in Newtownards, the 6 deaths from all causes registered in that district including one from whooping-cough and one from diarrhoea. Among the 154 deaths from all causes in Belfast are one from measles, one from whooping-cough, one from diphtheria, 5 from enteric fever, and 5 from diarrhoea.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994; that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, April 25, amounted to 219—111 boys and 108 girls; and the deaths to 189—78 males and 111 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 26·0 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the Area, the rate was 24·8 per 1,000. During the sixteen weeks ending with Saturday, April 25, the death-rate averaged 27·4, and was 3·0 below the mean rate for the corresponding portions of the ten years 1893–1902.

One death from small-pox was registered (no vaccination cicatrix). The total number of deaths from small-pox registered during the 7 weeks ended April 25 was six. There was one death from measles. Scarlet fever caused 2 deaths, influenza caused 3 deaths, whooping-cough caused one death. Two deaths were due to diphtheria, and one to enteric fever. In the 4 preceding weeks deaths from the latter disease were 3, 2, 4, and 3 respectively. No mortality was recorded from typhus fever or from diarrhoea.

Forty-two deaths were attributed to tuberculous disease—namely, one death to tuberculous phthisis and 26 deaths to *phthisis*, 6 deaths to tuberculous meningitis, one death to tuberculous peritonitis, and 8 deaths to other forms of the disease.

Six deaths were recorded from *malignant disease* ("cancer"), and 3 deaths from carcinoma were also registered.

There were 15 deaths from diseases of the nervous system, including 3 deaths from *convulsions*, all of children under 5 years of age.

There were 28 deaths from diseases of the heart and blood vessels.

Of 39 deaths from diseases of the respiratory system, 28 were due to bronchitis, one to broncho-pneumonia, 4 to *pneumonia*, and 6 to other diseases of the respiratory system. The total (39) is equal to an annual average rate of 5·4 per 1,000 of the population of the Registration Area, the annual average rate for the corresponding weekly period in the past 10 years being 6·0 per 1,000.

Three deaths from accidental causes and one death by suicide were registered during the week.

In 8 instances the cause of death was "uncertified," there having been no medical attendant during the last illness; these cases include the deaths of 3 children under one year of age and the deaths of 2 persons aged 60 years and upwards.

Forty-five of the persons whose deaths were registered during the week were under 5 years of age (25 being infants under one year, of whom 8 were under one month old), and 56 were aged 60 years and upwards, including 22 persons aged 70 and upwards, of whom 10 were octogenarians, and one (a female) was stated to have been aged 92 years.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

Returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and by Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast:—

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended April 25, 1903, and during each of the preceding three weeks.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	German Measles (Rubella)	Scarlet Fever	Typhus Fever	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Other Notifiable Diseases	Total
City of Dublin	Apr. 4	12	6	-	17	-	-	11	-	2	10	13	2	3	-	76
	Apr. 11	17	10	5	40	-	-	9	-	1	12	13	-	3	-	114
	Apr. 18	17	10	-	33	-	-	4	-	-	13	19	-	3	2	101
	Apr. 25	8	6	-	24	-	-	4	-	-	13	9	-	4	3	71
Rathmines and Rathgar Urban District	Apr. 4	-	20	-	5	-	-	1	-	-	-	-	-	-	-	26
	Apr. 11	-	5	-	6	-	-	1	-	-	-	-	-	-	-	12
	Apr. 18	-	1	-	1	-	-	-	-	-	-	-	-	-	-	3
	Apr. 25	-	5	-	7	-	-	-	-	-	8	-	-	-	-	15
Pembroke Urban District	Apr. 4	-	-	-	1	-	-	-	-	-	-	1	-	-	-	2
	Apr. 11	-	1	-	2	-	-	-	-	1	-	-	-	-	1	6
	Apr. 18	-	3	-	2	-	-	2	-	-	-	1	-	-	-	8
	Apr. 25	-	2	-	10	-	-	2	-	-	1	2	-	-	-	17
Blackrock Urban District	Apr. 4	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	Apr. 11	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
	Apr. 18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Apr. 25	-	-	-	1	-	-	-	-	-	-	-	-	-	1	2
Kingstown Urban District	Apr. 4	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	Apr. 11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Apr. 18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Apr. 25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
City of Belfast	Apr. 4	-	-	-	6	-	-	8	-	13	16	15	1	-	-	59
	Apr. 11	-	-	-	1	-	-	11	1	8	10	5	-	-	-	36
	Apr. 18	-	-	-	-	-	-	3	1	11	30	13	-	-	-	58
	Apr. 25	-	-	-	6	-	-	10	-	12	22	6	-	-	-	56

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ending Saturday, April 25, 1903, 10 cases of small-pox were admitted to hospital, 7 were discharged, there was one death, and 35 patients remained under treatment at its close. Besides these there were 40 convalescents at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Eight cases of measles were admitted to hospital, being 12 below the admissions for the preceding week; 13 cases were discharged, and 32 cases remained under treatment at the close of the week.

Thirty-one cases of scarlatina were admitted to hospital, 30 cases were discharged, there were 2 deaths, and 205 cases remained under treatment at the close of the week.

Six cases of diphtheria were admitted to hospital, 6 were dis-

charged, there were 2 deaths, and 23 cases remained under treatment at the close of the week.

Eight cases of enteric fever were admitted to hospital, 8 cases were discharged, there was one death, and 43 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 10 cases of pneumonia were admitted to hospital, 8 patients were discharged, and 22 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, April 25, in 76 large English towns, including London (in which the rate was 16·8), was equal to an average annual death-rate of 17·4 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 18·5 per 1,000, the rate for Glasgow being 20·3, and for Edinburgh 17·9.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of April, 1903.

Mean Height of Barometer,	-	-	-	29·913 inches.
Maximal Height of Barometer (17th, at 9 a.m.),	-	-	-	30·504 „
Minimal Height of Barometer (29th, at 9 a.m.)	-	-	-	29·188 „
Mean Dry-bulb Temperature,	-	-	-	45·2°.
Mean Wet-bulb Temperature,	-	-	-	42·1°.
Mean Dew-point Temperature,	-	-	-	38·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·235 inch.
Mean Humidity,	-	-	-	77·9 per cent.
Highest Temperature in Shade (on 6th),	-	-	-	61·1°.
Lowest Temperature in Shade (on 17th),	-	-	-	29·9°.
Lowest Temperature on Grass (Radiation) (17th),	-	-	-	27·5°.
Mean Amount of Cloud,	-	-	-	58·9 per cent.
Rainfall (on 17 days),	-	-	-	1·050 inches.
Greatest Daily Rainfall (on 25th),	-	-	-	·340 inch.
General Directions of Wind,	-	-	-	N.W., W., N.E.

Remarks.

Like April, 1902, this was a distinctly cold month. The mean temperature fell short of the average by 1·7°, and April was only 0·3° warmer than March—the seasonal advance of temperature being practically at a standstill. Winds from polar quarters pre-

dominated. The cold at Eastertide was especially severe, the mean temperature for Easter Week (12th–18th, inclusive) being as low as 39·5°. On Easter Monday there were several blizzards of hail and snow, and on the night of the 17th the thermometer fell to 29·9° in the screen even in the City of Dublin. The duration of bright sunshine was estimated at only 137½ hours, compared with 205 hours in April, 1901, and 199½ hours in 1902. The daily average duration of sunshine was only 4·6 hours.

In Dublin the arithmetical mean temperature (45·9°) was 1·7° below the average (47·6°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 45·2°. In the thirty-eight years ending with 1902, April was coldest in 1879 (the cold year) (M. T. = 44·5°), and warmest in 1893 (M. T. = 51·4°).

The mean height of the barometer was 29·913 inches, or 0·063 inch above the average value for April—namely, 29·850 inches. The mercury rose to 30·504 inches at 9 a.m. of the 17th, and fell to 29·188 inches at 9 a.m. of the 29th. The observed range of atmospheric pressure was, therefore, 1·316 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 45·2°, or only 0·8° above the value for March, 1903. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × ·476), the value is 45·5°, or 1·8° below the average mean temperature for April, calculated in the same way, in the thirty years, 1871–1900, inclusive (47·3°). The arithmetical mean of the maximal and minimal readings was 45·9°, compared with a thirty years' (1871–1900, inclusive) average of 47·6°. On the 6th the thermometer in the screen rose to 61·1°—wind, W.S.W. ; on the 17th the temperature fell to 29·9°—wind, N. The minimum on the grass was 27·5°, also on the 17th.

The rainfall was 1·050 inches, distributed over 17 days. The average rainfall for April in the thirty-five years, 1866–1900, inclusive, was 1·950 inches, and the average number of rainy days was 15. The rainfall, therefore, fell short of the average, while the number of rainy days exceeded it. In 1877 the rainfall in April was very large—4·707 inches on 21 days. On the other hand, in 1873, only ·498 inch was measured on 8 days. In 1902, 2·061 inches fell on 16 days.

Fog was observed on the 18th, 19th, 23rd, and 24th. High winds were noted on 7 days, reaching the force of a gale on the 7th only. Hail fell on the 12th, 13th, and 16th ; snow and sleet on the 13th. The temperature rose above 60° in the screen

on only one day (the 6th). It failed to reach 50° on 10 days. It fell to 32° in the screen on 4 nights, and on 7 nights it fell to or below 32° on the grass. The mean lowest temperature on the grass was 37·0°, compared with 36·8° in 1902, 37·3° in 1901, 39·0° in 1900, 37·8° in 1899, 40·2° in 1898, 37·7° in 1897, 40·6° in 1896, 37·8° in 1895, 40·0° in 1894, 38·2° in 1893, 32·4° in 1892, 34·1° in 1891 and 1890, 34·4° in 1889, 34·6° in 1888, and 31·6° in 1887. Lightning occurred on the evening of the 30th.

The rainfall in Dublin during the four months ending April 30th amounted to 10·176 inches on 78 days, compared with 7·175 inches on 59 days in 1902, 6·520 inches on 58 days in 1901, 8·002 inches on 79 days in 1900, 7·557 inches on 71 days in 1899, 7·236 inches on 64 days in 1898, 9·554 inches on 79 days in 1897, 5·781 inches on 63 days in 1896, 10·233 inches on 65 days in 1895, only 3·203 inches on 46 days in 1891, and a thirty-five years' average of 8·120 inches on 65 days.

Dr. B. H. Steede, M.D., D.P.H., reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 1·178 inches on 12 days, compared with 1·830 inches on 17 days in 1901, and 3·017 inches on 13 days in 1902. The heaviest falls in 24 hours were ·440 inch on the 25th, and ·311 inch on the 26th. Since January 1, 1903, 14·780 inches of rain have been measured on 77 days. The maximal shade temperature was 60·0° on the 6th, the minimal reading was 30·0° on the 14th.

At Knockdolian, Greystones, Co. Wicklow, the rainfall amounted to 1·165 inches on 9 days, compared with 2·800 inches on 15 days in April, 1901, and 3·105 inches on 14 days in April, 1902. The heaviest fall in 24 hours was ·610 inch on the 25th. The total rainfall in 1903, up to April 30th, was 12·385 inches on 63 days, compared with 9·215 inches on 48 days in 1902, 10·060 inches on 56 days in 1901, 13·191 inches on 70 days in 1900, 12·380 inches on 70 days in 1899, 8·890 inches on 56 days in 1898, 13·080 inches on 80 days in 1897, and 5·686 inches on 50 days in 1896.

At Cloneevin, Killiney, Co. Dublin, 1·37 inches of rain fell on 12 days. The maximal fall in 24 hours was ·46 inch on the 25th. Sleet fell on the 12th and 13th. The average rainfall in April of the eighteen years, 1885-1902, was 1·837 inches on 14·5 days. Since January 1, 1903, 9·67 inches of rain fell at this station on 76 days, compared with 8·08 inches on 59 days in 1902, 7·62 inches on 59 days in 1901, 9·23 inches on 77 days in 1900, 9·02

inches on 65 days in 1899, 7·74 inches on 61 days in 1898, 10·36 inches on 83 days in 1897, 5·27 inches on 55 days in 1896, 11·28 inches on 66 days in 1895, 9·09 inches on 74 days in 1894, and 6·94 inches on 57 days in 1893.

Dr. Arthur S. Goff reports the rainfall at Lynton, Dundrum, Co. Dublin, as 1·35 inches on 16 days, compared with 2·63 inches on 16 days in 1902, and 1·19 inches on 12 days in 1901, the greatest daily rainfall being ·37 inch on the 28th. The mean shade temperature was 45·9° compared with 48·3° in 1901, and 46·6° in 1902. The thermometric range was from 60° on the 6th to 31° on the 14th, 16th, 17th, and 18th.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall was 3·301 inches on 15 days, ·800 inch being recorded on the 5th. Slight falls of snow and hail occurred on the 13th.

At the Ordnance Survey Office, Phoenix Park, Dublin, 1·051 inches of rain fell on 18 days, the greatest rainfall in 24 hours being ·365 inch on the 25th.

In Cork, the rainfall amounted to 1·82 inches on 14 days, ·49 inch being measured on the 28th.

Dr. J. Byrne Power, F.R., Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 46·1°, being 2·1° below the average for April during the previous 5 years. The extremes were—highest, 61·5° on the 6th; lowest, 31·5° on the 17th. At Bournemouth the mean was 46·6°; the extremes being—highest, 58° on the 18th; lowest, 30° on the 17th and 18th. The average mean temperature for each and every one of the winter months of January, February, March, November, and December during the past 5 years (1898–1902) was considerably higher at Kingstown than at Bournemouth, the average mean for the 5 months during the 5 years being, at Kingstown 44·3°, and at Bournemouth 43·0°. This relative condition of temperature is now becoming reversed as the summer solstice approaches, and from that period the summer heat becomes intense, and at times very oppressive on the south coast of England, while at Kingstown it will be comparatively cool. The mean daily range of temperature at Kingstown in April was 11·9°, and at Bournemouth 15·7°. The rainfall at Kingstown was 1·54 inches on 13 days, and at Bournemouth 2·58 inches on 12 days. The total duration of bright sunshine was 149·1 hours at Kingstown, 138·8 at the Ordnance Office, Phoenix Park, 145·2 at Valentia, 147·4 at Parsonstown, 165·4 at Southport, and 137·4 at Eastbourne.

PERISCOPE.

THE WEATHER OF MARCH, 1903, AT KINGSTOWN, CO. DUBLIN.

DR. J. BYRNE POWER, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature of March at that health resort was $46^{\circ}0'$, being $2^{\circ}4'$ above the average for the month during the previous 5 years; the extremes were—highest, $60^{\circ}5'$ on the 26th; lowest, 35° on the 18th. The mean temperature at Portland Bill and at Dungeness was $46^{\circ}5'$, and at Bournemouth it was $46^{\circ}9'$. The mean temperatures for the month along the South Coast of England are remarkably high, that for Dungeness being as much as $5^{\circ}4'$, that at Portland $4^{\circ}2'$, and that at Bournemouth $4^{\circ}3'$ above the averages at these stations respectively for the month of March, whereas that of Kingstown, which is almost as high, is only $2^{\circ}4'$ above the average. The mean daily range of temperature was $11^{\circ}8'$ at Kingstown, $10^{\circ}0'$ at Dungeness, $7^{\circ}6'$ at Portland, and $10^{\circ}3'$ at Bournemouth. The mean temperature of the sea at Sandycove Bathing Place was $45^{\circ}1'$ —maximum 47° , minimum 43° . The total rainfall for the month at Kingstown was 3.42 inches on 25 days, and on the 12th 1.15 inches was measured. This rainfall was excessive, being 2.31 inches above the average for the same month during the previous 5 years. The rainfall at Portland was 2.63 inches on 20 days, at Dungeness it was 1.46 inches on 18 days, and at Bournemouth it was 2.63 inches on 20 days. The total duration of bright sunshine was 131.5 hours at Kingstown, 120.9 hours at the Ordnance Survey Office, Phoenix Park, 70.1 hours at Valentia, 108.9 hours at Parsonstown, 88.9 hours at Southport, and 131.2 hours at Eastbourne. The remarkable absence of vernal east wind at Kingstown observed during February continued during March, as again on one day only was it in that quarter—i.e., E.N.E., on the 14th.

THE GREAT PHYSICIAN.

WE have received from Nicholas Lehmann, of the Imperial and Royal Art Institute and Exhibition, Prague, a print of Gabriel v. Max's celebrated painting of Christ raising the daughter of Jairus. The engraving has been executed by the firm of Blechinger and Leykauf, Vienna. Its size is 47 cm. by 69 cm.; the size of the mount is 90 by 120 cm., and its price is thirty shillings. The

incident represented in this touching picture is recorded in St. Mark, v. 41. An art critic, Nicholas Mann, thus describes the original painting :—"The SAVIOUR of the world, a powerful figure full of dignity and grace, has seated Himself on the couch and gazes, in earnest contemplation, upon the maiden laid prostrate by the ruthless destroyer. And as if we heard the words : ' Damsel, I say unto thee, arise,' He tenderly holds her motionless hand in His through which the life-giving force like a joyful message gradually reaches her heart. And what mystical touching charm is cast around the young dead girl, upon whom His superhuman power is already beginning to operate ! May not a dawn of life be traced in the still closed eyes and lips of her pallid face, and does not her hand seem to grope for some support, as if she were gradually coming back to life ? We perceive it only on the right side of her tender face and slender body, and the other is still quite motionless : but this will soon be moving too, and then an act of divine charity will be finished, representing along with it the sublime idea of the victory over death. Although apparently the deepest silence reigns, yet in fact this grand conception is a scene of the most intense action. In composition and colour it is of classical beauty, simplicity and greatness. The glorification of the power of boundless love, the most touching revelation thereof for the imitation of CHRIST, this picture must infallibly command our sympathy and admiration, and in all Christian Art the subject has hardly ever been symbolised more characteristically or sublimely."

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a meeting of the College held on May 18th, 1903, the following gentlemen, having passed the necessary examinations, were admitted Fellows of the College :—Andrew Milroy Fleming, C.M.G., M.B., C.M., Rhodesia, South Africa ; Ernest Cutcliffe Hadley, M.R.C.S. Eng., L.R.C.P. Lond. ; Dudley Herbert Malins, M.B., C.M., Birmingham ; Arthur Anderson Martin, M.B., Ch.B., New Zealand ; Robert Macfarlane Mitchell, M.B., Ch.B., Edinburgh ; Cutberth Balfour Paul, M.B., Ch.B., Edinburgh ; John Richards, M.B., C.M., Leicester ; Frederic David Simpson, M.B., Ch.B., Edinburgh ; Charles Heron Watson, M.B., Ch.B., Edinburgh ; Alexander Simpson Wells, M.B., Ch.B., Cape Town ; and Henry Higham Wigg, M.R.C.S. Eng., L.R.C.P. Lond., Adelaide. The Medal and set of books forming the " Bathgate Memorial Prize," presented to the College by Colonel William Lorimer Bathgate in

memory of his late father, William M'Phune Bathgate, Fellow of the College, was awarded to Miss Nettie Bell Turnbull, Edinburgh, for the highest marks obtained in competitive examination in *Materia Medica and Therapeutics*.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH. ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE following gentlemen, having passed the requisite examinations of the Conjoint Board, were admitted Diplomates in Public Health :—Thomas Cathcart Caldwell, M.B., Ch.B. (Ireland); Robert James Geddes, M.B., C.M. (Port Glasgow); Andrew Gilmour, M.B., Ch.B. (Edinburgh); Robert Ashleigh Glegg, M.B., Ch.B. (Edinburgh); Charles William Howe, M.B., Ch.B. (Edinburgh); John Hume, M.D. (Lauder); Hubert Astley Knight, M.B., Ch.B. (Dublin); and Walter Barrie Turnbull, M.B., C.M. (Aberdeen).

THE MEDICAL, SURGICAL. AND HYGIENIC EXHIBITORS' ASSOCIATION. THE Medical, Surgical, and Hygienic Exhibitors' Association. Limited, will hold their Seventh Annual Exposition of Professional Exhibits at the Queen's Hall, Langham-place, London, W., on June 2nd, 3rd, 4th and 5th, 1903, from 2 p.m. till 10 p.m. each day. Music by select orchestra every afternoon and evening. We wish them the same success as in previous years.

MINIMAL NARCOSIS IN MINOR OPERATIONS.

RIEDEL (*Ber. klin. Woch.*) says that in minor operations in which local anæsthesia is not sufficient to produce the desired result, and in all cases of reduction of fractures, chloroform is much to be preferred to ether. The amount of chloroform necessary is from 80 to 100 drops. This amount should be administered inside of two minutes, and preferably upon a fasting stomach. The patient is not completely narcotised, but operative procedures and manipulation, if promptly begun at the expiration of the two minutes and quickly completed, cause the patient no pain.

SUMMER DIARRHŒA IN CHILDREN.

DR. MAURICE OSTHEIMER states that the most important treatment is the absolute withdrawal of food, no matter what the infant is taking. The child should be kept out of doors, or, if this is not possible, in the largest room in the house, with the windows open.

In case of vomiting calomel is given ; if frequent bowel movements persist, bismuth subnitrate with a little salol is given. During convalescence small doses of tincture of *nux vomica* will be of service.—*Philadelphia Med. Journal.*

HEADACHE AND NEURALGIA OF NASAL ORIGIN.

M. H. LAVRAND reports a number of cases (*Jour. Soc. méd. de Lille*) to support his statement that cough, glottic spasm, asthenia, neuralgia, mental disturbance, and so forth, are due to certain nasal lesions. These lesions are swelling and turgescence of the mucosa of the inferior turbinates, foreign bodies, and spurs or deviations of the septum. Besides these is the existence of hyperæsthetic zones, which are readily demonstrated by a nasal exploration under cocaine anæsthesia.

THE CHICOE FLEA IN MADAGASCAR.

THE *Gazette médicale de Paris* reports a perfect plague of the chigoe flea in the island of Madagascar, where the parasite was unknown five years ago. All classes and nationalities in the country are suffering from characteristic foot ulcers that the insect produces. These affections have become so common that native boys have acquired great dexterity in removing chigoes, and may be seen every evening so employed on the feet of Europeans. The French inhabitants assert that the pest was brought to the island by some Singalese and Hauossa immigrants.

CHOREA.

M. J. COMBY (*Soc. méd. des. Hôp.*) thus formulates his treatment of chorea :—(1) Rest in bed for fifteen days. (2) Isolation from relatives and companions. (3) Rest of mind and body. (4) Milk diet for children ; adults may get soups and vegetables, but no solid meat food. If the case is a severe one the diet should be exclusively of milk. (5) For nine consecutive days the patient should get arsenic in gradually increasing doses. The average duration of treatment is twelve days.

UNUSUAL TUMOURS.

M. GAREL, at the Société médicale des Hôpitaux de Lyon, reported the removal of a pedunculated tumour of the larynx, the size of a walnut, that seriously interfered with respiration and the power of speech, from a woman. The tumour, a fibroma, was excised by a loop of wire heated by electricity. He also presented to the

Society two lipomata which he had excised from the soft palate, and a congenital tumour of uncertain pathology which he had also excised from the same region.—*Lyon médical*.

AN INTERESTING CASE.

At the Société de Chirurgie, Paris, on the 29th of April, M. Pierre Sebileau exhibited a patient, twenty-five years of age, who had been trepanned for fronto-maxillary sinuses. A large scar followed which greatly disfigured the man, to remove which M. Sebileau inserted a thin gold plate. He fixed the plate in position, attaching it to the external inferior orbital angles of the frontal bone. The result from the æsthetic point of view is all that could be desired. The foreign body is tolerated by the living tissues, and has excited neither inflammation nor inconvenience.

RUPTURE OF THE LIVER AND SPLEEN WITHOUT ANY EXTERNAL EVIDENCE OF THE INJURY.

At the December meeting of the Société des Sciences Médicales de Lyon, M. Pallasse reported a case of rupture of the liver and spleen. The patient, a woman of twenty years old, was knocked down and run over by a cart, and an hour afterwards she was admitted into l'Hôtel Dieu. The extremities were intact, and there was no sign of contusion on the stomach. The abdomen was soft, the extremities were cold, the pulse feeble, and the face was pallid. The patient was unconscious, and remained so until she died, three hours and a half after her admission. The autopsy showed that the liver had been bruised into a pulp and the upper third of the spleen had been severely lacerated; the whole abdominal cavity was filled with blood.—*Lyon médical*.

ACHONDROPLASIA.

At the meeting of the National Society of Medicine of Lyons, on the 18th of February, 1903, M. Leriche presented a case of achondroplasia. The patient is thirty-one years old. He was born at the full term and was nursed at the breast by his mother for twenty months. He did not make an effort to walk for eighteen months. During infancy he suffered from bronchitis and scarlatina, and at twenty-one years of age he had an attack of pneumonia. He is an intelligent man; at six years of age he could both read and write. His head is well formed, without an exaggeration of the osseous eminences. His height is 1 m. 21, and his limbs are of proportionate size. His head is round and globular,

0 m. 56 in circumference, 0 m. 17 in length; 0 m. 165 transversely: the cephalic index is 98.8.—*Lyon médical*. [Is achondroplasia an atavistic reversion?]

SUTURE OF THE EXTERNAL ILIAC ARTERY.

M. WIART has successfully sutured the external iliac artery, which was wounded during the operation for strangulated hernia. M. Dechet, describing the operation to the Société de Chirurgie, stated that the wound in the artery was a longitudinal one of 4 to 5 mm. The interesting point is that M. Wiart inserted his sutures through the whole thickness of the arterial walls. The patient made a good recovery, but eight months afterwards the femoral artery close to its origin had no pulse.

TUBERCULAR OSTEITIS OF THE FRONTAL BONE IN A CHILD.

M. TIXIER (*Soc. de Chir. de Lyon*) reported the case of a boy, six years old, who after an attack of measles followed by varicella, when three years and a half old, developed tubercular disease of the frontal bones. The bones were trepanned and the underlying fungosities were scraped off the dura mater. The operation was a success; the child became perfectly free of the distressing headache, probably due to the fungosities, of which it formerly complained.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"Tabloid" Hypodermic Strychnin Sulphate, gr. $\frac{1}{30}$ (0.0016 gm.)

IN view of the usefulness of strychnin in cases of emergency, such as those in which heart failure is threatened, it has been thought desirable by Messrs. Burroughs, Wellcome & Co., Snow Hill Buildings, London, E.C., to make this further addition to their list of "tabloid" hypodermic products of strychnin sulphate. The essential requirements in drugs intended for hypodermic use are combined in this as in all other "tabloid" hypodermic products, which contain only drugs of exceptional purity in a freely soluble condition. Accuracy of dosage, so important in the case of potent poisons, is also assured without possibility of error. The full list of "tabloid" hypodermic products of strychnin sulphate now comprises—"Tabloid" hypodermic strychnin sulphate, gr. $\frac{1}{30}$ (0.00043 gm.); gr. $\frac{1}{60}$ (0.00065 gm.); gr. $\frac{1}{90}$ (0.00108 gm.); gr. $\frac{1}{40}$ (0.0016 gm.); gr. $\frac{1}{30}$ (0.0022 gm.)—all of which are issued in tubes containing 20.

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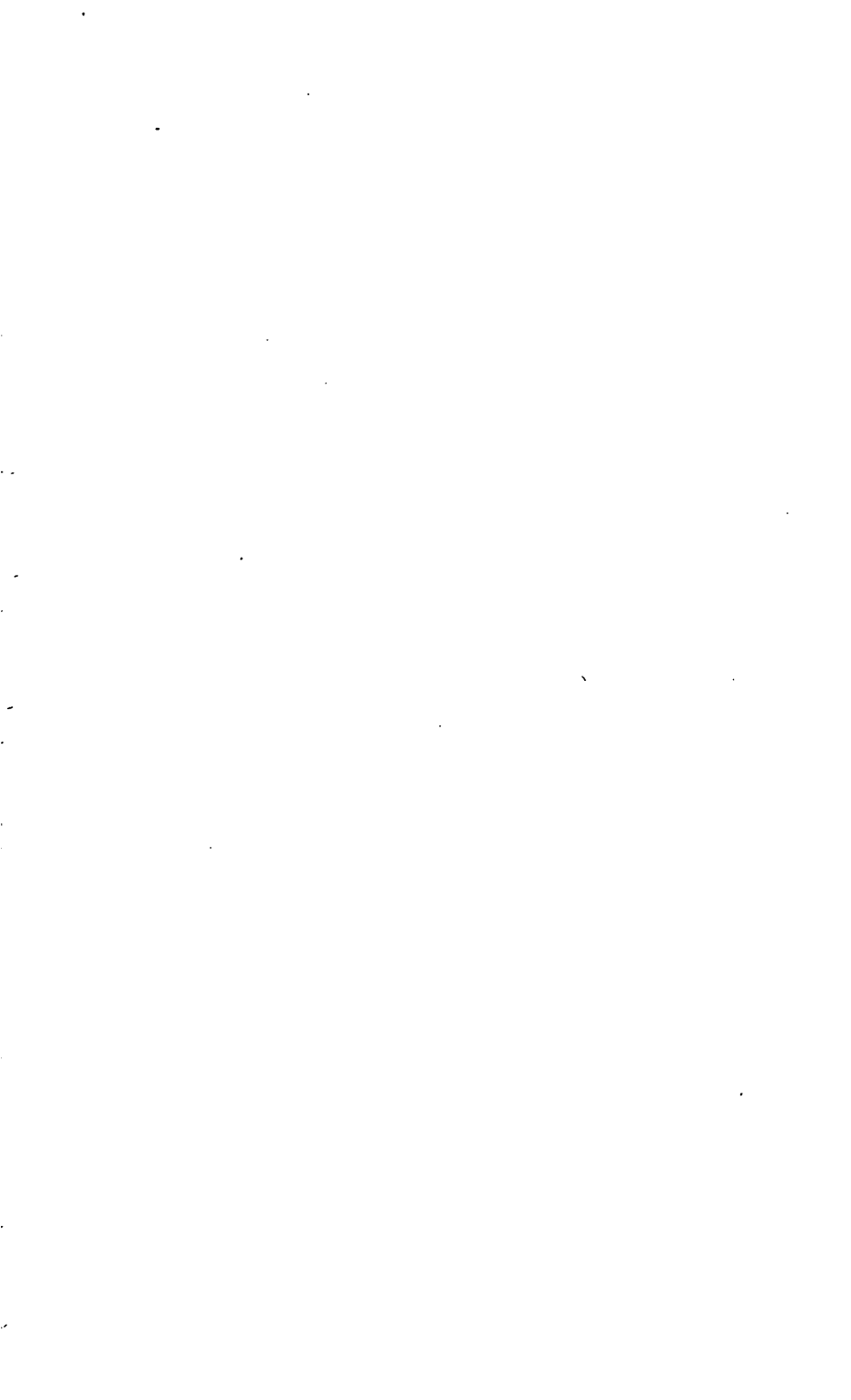
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